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The JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

CRAWFORD WILLIAMSON LONG
(1815-1878)

FIRST TO EMPLOY ETHER FOR SURGICAL ANESTHESIA
See Editorial Page 1

Volume 40 JANUARY, 1947 Number 1

to combat

depression associated with

persistent pain...

Many patients suffering from persistent pain are subject to attacks of depression characterized by deep apathy and emotional exhaustion. Thus, pre-existing neurotic tendencies may be exaggerated and the pain threshold progressively lowered.

By restoring morale and optimism, Benzedrine Sulfate will often effectively combat the depression which may complicate the management of painful conditions. Needless to say, Benzedrine Sulfate is not indicated in the casual case of low spirits, as distinguished from true mental depression.

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THE JOURNAL
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OKLAHOMA STATE MEDICAL ASSOCIATION

EDITORIALS

EONS OF PAIN — A CENTURY OF LETHE

Victo Dolore

When Sir James Y. Simpson, who first used chloroform in obstetrics, was made a baron in 1866 he placed the above words on his coat-of-arms. Translated into English these words mean *victory over pain.*

Recently medical historians celebrated the centennial of the first public demonstration of surgical anesthesia. It was on October 16, 1846, when William Thomas Green Morton through the administration of ether rendered a patient unconscious and insensitive to pain at the Massachusetts General Hospital while John Collins Warren performed a surgical operation.

To Crawford W. Long of Jefferson, Georgia, belongs the credit of first employing ether for surgical anesthesia. On March 30, 1842, he administered ether for the removal of a tumor from the neck of James M. Venable. The recognition and honor so well deserved by Crawford W. Long was forfeited by the fact that his was not a public demonstration and that he unduly delayed publication of this remarkable feat. The contraversy between Wells, Jackson and Morton and the long delayed recognition of Long is well known. This controversy, yet unsettled, was most unfortunate. The best we can do is to accept Oliver Wendell Holmes' verdict — "To E(i)ther".

The first ether anesthesia in Europe was for the extraction of a tooth in the home of Francis Boott on Gower Street in London. Boott had been notified by Jacob Bigelow, professor of material medica at Harvard Medical School. In turn Boott informed the great surgeon, Liston, who on December 21, 1846, performed an amputation of the thigh while the patient was under this marvelous vapor. In a letter to Francis Boott he said, "It is a very great matter to be able thus to destroy sensibility. . . ."

A great wonder had come to pass. The patient did not feel the amputation but Liston, operating because of a discharging sinus from an injured tibia, knowing nothing of the danger, infected the stump and the patient died of septicemia. The student Joseph Lister witnessed this operation and was permitted to see "victory over pain" and to witness the course of infection over which one day he would stand victorious.

The news of ether anesthesia swept continental Europe like a whirlwind. It was no longer necessary to do a major amputation "while a colleague was taking a pinch of snuff". Speed was not so essential when pain no longer racked the body.

Samuel Guthrie of Sacketts Harbour, New York, discovered a method of preparing an alcoholic solution of chloric ether (chloroform) and wrote to Benjamin Silleman of Yale University about its stimulating qualities. It was suggested that it might be of use in medicine. Almost simultaneously chloroform was discovered in France and Germany. Guthrie had failed to date his letter and when the anesthetic value of chloroform was demonstrated controversy as to priority arose as in the case of ether. Though Guthrie deserves the credit of being the first to prepare chloroform and though he recognized its stimulating qualities he missed the glory of demonstrating and announcing its anesthetic virtues. In spite of his chemical sagacity, he saw his own daughter fall into a "sweet sleep" through accidental inhalation of chloroform in his laboratory without sensing its remarkable possibilities.

After James Y. Simpson proved its anesthetic virtue and popularized its use in obstetrics Guthrie with "no happiness (and) without a home" pathetically wrote as follows. "You see it called chloroform and the newspapers are beginning to give me credit for discovering it. I made the first particle that was ever made. . . ."

Thus America can claim credit for anesthesia, the greatest boon that has come to mankind. Wherever the knife is used, wherever babies are born, wherever bones are set and wounds are attended, the spirits of Long and Guthrie are hovering in the ether.

A HOUSE NOT BUILT UPON SAND

It is impossible to observe the operations of the American Medical Association as revealed in the House of Delegates without being impressed with the importance and the magnitude of this great organization. It is interesting to note with what serious vein the delegates go about their business, yet one is reminded of the two theatrical masks as he observes the change of countenance on the faces of the delegates as the business before the House shifts in character and importance. Often the smile and the scowl are observed flitting across the same fine face, each yielding to the other as occasion demands. This was particularly true while resolutions were being presented in rapid succession.

An incomparable body of great men busy about the health of the nation. While burdened with such grave responsibilities it is fortunate that they can cast aside the scowling mask for the saving sense of humor. Thus, only, can level vision be focused upon the tasks at hand and the problems to come.

The delegates need the multiple eyes of Argus and as many ears; they should have the reasoning of Socrates and the wisdom of Solomon; the fire of Mount Sinai and the savor of the Sermon on the Mount.

THE CAMPAIGN

In the December issue of the Journal the leading editorial was on Giving. In another section of this issue you will find a statement explaining the Oklahoma Medical Research Foundation and the campaign to raise three million dollars.

Every worthy physician in the State will want a part in the building of this Foundation. According to the editorial on Giving it does not take a fortune to be a generous giver. With this in mind, every physician should contribute.

In the old world the mills of the gods have been shut down by war. The channels through which scientific grist flowed have been choked. Research workers and the tools of research have been destroyed. The United States must salvage what is left, recast the plans and supply the tools. Our opportunity is at hand. We must provide ways and means for our native talent. With the courage and the pertinacity of the apostle Paul let us "lay hold upon the hope set before us". There may be a Banting or a Best below the Canadian border. Why not in the middle west.

We must help bring to Oklahoma a new era. If we do our best history will date it and perhaps mark it. We should make sure that our grandchildren find our names among the original subscribers. They may need the inspiration it would provide.

TRENDS TOWARD SOCIALIZATION DANGEROUS

The New Deal, on the verge of ruin, cannot afford the risk of compulsory health insurance which in plain English is socialized medicine. Before going too far the United States might well take warning from present conditions in Great Britain. The Labor Party now in power cannot satisfactorily manage its labor troubles, let alone medical service and other agencies growing out of socialistic policies. Some of these trends are discussed in the October 21 Newsweek. Coal miners refuse to stay on the job now that their wages compare with those of workers in more privileged occupations, the situation being aggravated by sufficient money to purchase necessities and luxuries not available, including food. When accorded a special ration of meat, other hungry groups make embarrassing demands upon the hard pressed government.

Under the title "Revolte in Olde England" the Newsweek deals with the British government's housing projects designed to decentralize London by confiscating land and transforming "quaint sleepy villages" into modern towns of fifty to sixty thousand people. All this is indicative of mounting unrest and open revolt against government planning which usurps the individual and community rights.

SCIENTIFIC ARTICLES

THE ELECTROENCEPHALOGRAPH AS AN AID IN NEURO-PSYCHIATRIC DIAGNOSIS*

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In 1874 Caton discovered evidence of electrical activity in the brains of living animals; he also observed electrical fluctuations from the cortex of animals and postulated that these fluctuations were related to the functional activity of the brain.

In 1892 Beck showed that local damage to the cortex modified its electrical activity. Gotch and Horsley, in the same year, reported that special cortical areas gave an electrical response to certain types of peripheral stimulation.

Various investigators added greatly to the knowledge of electrical brain potential and in 1925 Reminski, who had also been working with a string galvanometer, published a report describing the electrical activity of the cortex in much the same way as we understand it today. He stated that there is a spontaneous fluctuation in potential with a frequency of 10-15 per second and a faster fluctuation of 20-32 per second.

Hans Berger worked with brain potentials as early as 1902, and in 1924 he successfully recorded the electrical activity of the human brain. In 1934 he demonstrated that the human brain has an electrical beat and that the beat comes from the neurons and changes with age, with sensory stimulation and with various changes in the physico-chemical state of the body. His observations, that the electroencephalogram comes from the cortex and is related to psychic activity, has been reaffirmed on numerous occasions by later workers.

The most evident aspect of the electrical activity of the cortex is its beat or rhythm. Under normal conditions the recorded beat responds to stimuli; such as illumination of the retina with a decrease in amplitude and increase in frequency. Also any physico-chemical disturbance of the cells alters the character of the recorded wave.

From a study of these various wave phenomena, electroencephalography is now being applied as an aid in neuro-psychiatric diagnosis, especially in helping to differentiate various types of epilepsy, as well as in the detection of local damage in the cerebral cortex.

The technique of electroencephalography is similar to that of electro cardiography, except that greater sensitivity has to be obtained by means of audio amplifiers and more rugged recording units. The electrodes are small plates that are held to the intact scalp with some adhesive material. Machines are made to run from one to eight leads at a time. For a more accurate diagnosis one should have two or more leads running at the same time for comparison.

For most routine checks the electrodes are placed bi-forntal, bi-parietal, bi-temporal and bi-occipital, and the ear lobe is used as the indifferent electrode. The dominant rhythm is 8 to 13 waves per second and 10-100 microvolts, and is known as alpha rhythm.

The machines are usually standarized at 50 microvolts before tape is run so that the voltage of the wave can be measured. The speed of the tape is usually 2½ or 3 c. per second.

Waves of from 8 to 12 per second are considered normal, slow, and very slow rhythms are border line abnormals. Psychomotor activity, petit-mal and petit-mal variant are definitely abnormal rhythms and are found at the other extreme of the spectrum. Fast and very fast waves are border line abnormals and spike and grand mal rhythm are

*Delivered before Section on Neurology, Psychiatry and Endocrinology, Oklahoma State Medical Association Annual Meeting, May 1, 1946.

pathological. The amplitude of the wave is of diagnostic value, especially if there is an amplitude asymmetery in one or more leads.

The age of the patient is important in reading the EEG. At birth, rhythmic brain waves are absent, but within the first few weeks a slow rhythm develops, which gradually approaches the adult pattern which is obtained about the twelfth year.

The EEG studies on known epileptics reveal that not all epileptics show the abnormal rhythm seen in seizure states. It has been shown that a significant proportion of epileptics have normal EEG in their inter-seizure periods. However, a large proportion of these may show seizure discharges upon hyperventilation. The seizure rhythm shows at either the slow or fast end of the spectrum. The type of rhythm is helpful in diagnosing the type of epilepsy as well as indicating the best pharmacological treatment.

Grinker states that, "Electroencephalograhpic studies of relatives of epileptic patients reveal cerebral dysrythmias in a large proportion. It is believed that the cerebral dysrythmia is apparently inherited and constitutional for the same type of dysrythmia can be demonstrated in twins and non-epileptics in the same family."

Great care must be used in interpreting the EEG, so that artifacts and age variation are not diagnosed as epilepsy. In normal young childen high voltage, slow plateaus and even spike discharges, suggestive of epilepsy may be observed.

At times drowsiness or sleep cause high voltage slow waves to appear. The typical dysrythmias found in epilepsy may at times be produced by gen paresis, tumors, infections, or other organic brain diseases.

In petit-mal epilepsy, the characteristic wave is a cusp and spike which occur at the speed of about 3 per second. Associated with this is usually a slow normal or border line slow, abnormal rhythm.

In grand-mal epilepsy there is also a slow, high voltage wave series with frequent isolated areas of fast spike waves. When the attack occurs, there is a burst of fast spikes during the tonic phase, followed by large, slow waves in the clonic phase, which changes to a flat, slow, low voltage wave during the stupor.

Psychomotor Epilepsy is characterized by large, slow, rather flat waves of high voltage that do not show quite so much of the spike phenomena.

The epileptic dysrythmias, at times, are seen in patients who are not showing clinical seizures, and their sub clinical attacks are usually many times more frequent than those that break through. However, it is also evident that a number of cases of clinical epilepsy do not show the epileptic dysrythmias during the inter seizure period.

In a certain number of migraine cases, as well as other headache and vertigo states, seizure discharges are seen on the EEG and usually respond well to dilantin or phenobarbital therapy. Grinker states that "the close relation of migraine to epilepsy is more than a clinical impression and has been statistically proven, but since both affections are ill-defined, are both symptomatic and idiopathic, their statistics have a limited value. In their periodicity of attacks, intervals of well-being, and other similarities, there is good reason to consider migraine and epilepsy as clinical manifestations of a fundamentally obscure disorder.

In Jacksonian epilepsy the EEG makes possible the localization of the attack. Lately the electroencephalogram has been used in cases of early eclampsia, to anticipate convulsive seizures in their patients and so far the results have been rather favorable.

Birth injuries, diffuse cerebral arteriosclerosis, Schilders disease, etc, show abnormally slow waves over the involved area. Sydenhams chorea with cortical involvement may show 2-3 per second waves in all leads. In cases of intracranial hemorrhage it is usual to find abnormally slow waves and occasionally even seizure discharges are seen. Berger reported that the electroencephalogram, in two severe cases of Korsakoff's psychosis, showed many 5-7 per second waves.

However, there are numerous cases of severe organic brain disease, that show little or no abnormal waves. There have been cases of Picks and Alzheimiers disease, confirmed at autopsy, with severe brain atrophy, that showed a normal EEG during life.

Many patients with multiple sclerosis and evidence of cortical involvement may show scattered slow waves, 6 to 8 per second, but many severe cases of this disease have no electroencephalographic evidence of disorder.

The maniac depressive psychosis, psychoneurosis and schizophrenia show either normal or questionably normal records. Although some investigators are of the opinion that some personality disorders show characteristic waves, this work has not been substantiated, and is denied by other. However,

work done by Gallagher and Gibbs on psychosis, behavior disorders and personality types, indicate that some sort of rough correlation can be made with the EEG. Children with behavior disorders have an excessive amount of 3 to 6 per second activity and show an irregular or choppy curve.

"Kalinowsky and Hoch, in their new book on shock therapy, state that following Metrazol injections, small 6 per second waves over the entire cortex were observed. When the convulsions follow, there is a sudden increase in size and decrease in frequency in the frontal region.

"The electrically induced, generalized convulsions are immediately followed by slow waves of .5 to 2 per second, which are equal over the entire cortex when breathing starts a 2-4 cycle wave predominatic A relatively normal rhythm is established within 30 minutes, folowing electric treatment."

There has been much controversy as to how much permanent damage is done to the brain by electro-shock therapy. Gibbs is of the opinion that the abnormal waves induced by electro-shock do not entirely disappear, and abnormal rhythms have been noted several years following shock treatment. For this reason it is apparent that the cases for electro-shock should be carefully chosen, and that treatments should be given only by trained personnel.

At present work is being done to try to determined by pre-treatment EEG the type of patient most likely to respond to electro-shock therapy.

Electroencephalography has recently reached the stage in its development where it is useful in the diagnosis of certain cerebral tumors. The crebral cortex in the neighborhood of a tumor gives rise to slow alterations in electrical potential, ranging from 1 in 2 seconds, to 2 per second. Such slow waves are only of value in localizing a tumor when the area from which they can be recorded is localized. As similar slow delta rhythm can be obtained from all parts of the head during sleep.

Grinker states that, "care must always be exercised in interpreting the electroencephalogram. It may be entirely normal even though a brain tumor is present. Whenever a sharply localized focus of delta waves can be repeatedly demonstrated, there is a strong indication that an expanding intracranial lesion lies in the neighborhood of that focus. The clinician should not be content until that suspecion is confirmed or very definitely disproved. On the other hand, such waves, which are indefinite, inconstant, or diffuse, do not have nearly as great an implication. The procedure cannot be considered as a substitute for a careful clinical investigation or for pneumoencephalography."

A variety of artifacts make interpretation of the electroencephalogram difficult. However, with experience, most artifacts can be avoided or rendered harmless by identification. Eye movements, blinks, and sweating give rise to slow high voltage potentials, which are easily mis-diagnosed.

In nervous patients who do not cooperate too well, it is frequently noted that the clamping of the jaw causes a fast spike wave of 30 per second which is due to muscle potential.

At times the electrocardiograph will be seen intermingled with the EEG. Condenser-like discharges at times, simulated psychomotor epilepsy.

SUMMARY

This paper has been presented in an attempt to bring together the latest knowledge of the EEG as a diagnostic aid. While great improvements are being made in the machines, and numerous investigators are trying to correlate their findings in EEG tracings with different neuro-psychiatric conditions. At the present time the machine has its greatest value in the epilepsies, head injuries, and localization of brain tumors.

Saul and the Davises have done a lot of investigating in correlating EEG with personality disorders, but as yet they have not been generally accepted.

The EEG should be used as another laboratory procedure, as an aid to diagnosis and not to make the diagnosis at the expense of a thorough clinical examination.

In evaluating the EEG, a positive evidence of abnormal brain waves is of great aid in evaluating the patient's condition, but a negative EEG does not rule out the existence of organic pathology.

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DISCUSSION

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It is only recently that an electroencephalograph has been available for our use, and as a result, our personal experience in its use as an aid to diagnosis has been limited. As the essayist has stated, electroencephalographic studies seem most valuable in the epilepsies, head injuries, and in the localization of brain tumors.

Its use in the convulsive disorders seems of particular value. If the outbursts of cortical dysrythmias arise from one local area in the cortex, then local excision of this area may be the treatment of choice. On the other hand, if multiple areas are found in the cortex giving rise to such abnormal waves, then the removal of a local area would not offer such a good prognosis, even though gross pathological changes could be demonstrated at this area.

We are all aware of the extreme value of a careful clinical history and neurological examination. Too often in such conditions, the neurological examination gives no positive aid. Infrequently is the examiner so fortunate as to observe an attack and too often members of the family are too emotionally upset at the time to observe accurately and be able to relate later the sequence of events during a seizure. The pneumoencephalogram is often normal in such cases, in that there are frequently no gross anatomoical or pathological changes. We, therefore, see how valuable the electroencephalogram can be in aiding to differentiate the epilepsies from other conditions that may simulate them in the patient that apears with a history of having had "attacks".

To the neurosurgeon, the localization of brain tumors is most necessary, and any means to aid in accomplishing this is welcomed. Admittedly, the electroencephalograph has its limitations in this respect, as many tumors are deep-seated and do not alter cortical activity. It is of particular value, however, in localizing lesions in the more silent areas of the brain where the cortex has been involved.

The electroencephalograph to me is another means by which a more accurate neurological diagnosis can be reached, and can be used to advantage along with other diagnostic aids.

SYMPATHETIC OPHTHALMITIS*

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Duke Elder states, "Sympathetic Ophthalmitis is a specific bilateral inflammation of the entire uveal tract of unknown etiology, characterized clinically by an insidious onset, a progressive course with exacerbation and usually a disastrous termination, and pathologically by a nodular or diffuse infiltration of the uveal tract with lymphocytes and epitheloid cells, which almost invariably follows a perforating wound involving uveal tissue. The disease appears in the injured eye (or exciting eye) at a variable time after injury and synchronously or shortly afterwards affects the other (or sympathizing) eye; but the clinical and pathological picture presented by the two eyes is identical."

*Presented before the Section on Eye, Ear, Nose and Throat of the Oklahoma State Medical Association at the Annual Meeting, May 3, 1946.

HISTORICAL

The concept of sympathetic inflammation is one of very considerable antiquity, but the history of the disease really commences with the masterly and comprehensive description of Machenzie (1835) who called the disease sympathetic ophthalmia. Wardrop (1819) had already drawn attention to the fact that veterinary surgeons had been in the habit of destroying the injured eye of a horse with lime or a nail in order to save the good one, but Prichard (1851) was the first to practice excision as a therapeutic measure. Twelve years later at the first Heidelberg

Congress, Critchett (1863) showed that excision was ineffective once the inflammation had broken out, and thus regularized prophylactic excision as it is practiced today. The next incidents of importance in the history of our knowledge of the disease were the critical survey and experiments of Schirmer (1900) and the classical histological studies of Fuchs (1905) who demonstrated that it was a separate disease — entirely distinct from any other affecting the eye; since their time the literature has been full of attempts to determine the etiology of this condition — a problem so baffling that our ideas upon it today are no more ordered than they were then.

INCIDENCE

It is a relatively rare disease, and owing to the improvements in the surgical technique of the treatment of wounds is undoubtedly becoming rarer.

More males are affected perhaps because of their greater exposure to injury.

It has been held that the young are especially suspectible, but statistics correspond very closely to the average age distribution of the general population. It is quite certain that no age is immune.

PREDISPOSING CAUSES

In practically all cases there is penetrating injury of the eyeball. In fact, it is thought that sympathetic inflammation does not arise without rupture of the globe; however, the rupture may be subjunctival. Perera states that 1.6 per cent of cases of sympathetic ophthalmia result from subconjunctival rupture.

Suppuration in the injured eye is rarely followed by sympathetic disease.

The most common exciting condition is that of a sub-acute inflammation in the soft shrunken eye in which delayed or incomplete healing of the wound is present.

Statistics in the literature show that about two per cent of perforating wounds result in sympathetic ophthalmitis.

It is interesting and says much for advances in surgery that while sympathetic ophthalmitis was very common in the American Civil War (16 per cent) and in the Franco-German War (50 to 56 per cent) and was still relatively common (five per cent) in the Russo-Japanese War, such cases were rare during World War I.

The interval between injury and the onset of inflammation varies from nine days to 50 years as reported in the literature; however, cases occur exceptionally before an interval of two weeks, 65 per cent occur occur before an interval of two months, 80 per cent before an interval of three months and 90 per cent before the lapse of a year. The most dangerous time is from the fourth to the eighth week. It follows that the chances of its development after three months are few, but the possibility of its incidence exists indefinitely.

ETIOLOGICAL THEORIES

Despite researches extending over a hundred years, the pathogenesis of sympathetic ophthalmitis is unknown, but of the many theories which have been put forward only two remain outstanding: the infective theory and the allergic theory.

INFECTIVE THEORY

The clinical behavior and pathological appearance of the disease strongly suggests an infective origin, but no bacteriological confirmation has resulted from innumerable researches. The hypothetical organism, its route of entrance into the exciting eye, and its method of attacking the sympathizing eye are alike unknown.

Today two suggestions occupy the center of the stage; one, that the disease is a tuberculous manifestation, and the other that it is a virus infection.

THE TUBERCLE BACILLUS

The granulomatous nature of the inflammation and its general resemblance to tuberculosis have led many authors to believe that sympathetic ophthalmitis is a tuberculous manifestation. The demonstration by Lowenstein (1931), however, of the frequency of a systematically innocuous tuberculo-bacillemia, of its occurrence in the blood in cases of sympathetic ophthalmitis (Meller, 1933-34) and, finally, the demonstration of the bacilli in the eye in such a case (Meller, 1936), added strong arguments to this view; but these findings have so far lacked general confirmation. Koch's postulates have not yet been fulfilled.

A virus infection is suggested by the failure of bacteriology to discover a causal organism. At present there is no proof that it is due to a cirus.

THE ALLERGIC THEORY

This is pased on the fact that the uveal pigment is organ specific instead of species specific. It assumes that an injury to the uveal pigment of one eye sensitizes the organism to uveal pigment, so that the other eye, which is the only place where such pigment exists, becomes the seat of an allergic

reaction. There are a number of important objections to this theory.

Probably it is due to infection by an exogenous virus perhaps inhabitating the conjunctival sac, that eventually becomes systemic but excites no symptoms, and localized in the other eye by allergic sensitization, or because the uvea forms the only favorable nidus for its development.

TREATMENT

The most important part of the treatment consists of prophylaxis, that is, excision of injured eye before sympathetic ophthalmia develops.

In severe injuries especially where the eye will be sightless prompt enucleation is indicated. Enucleation should be done before sympathetic ophthalmitis has become established. If uninjured eye is normal one month after the enucleation it can be considered safe.

In attempting to save an injured eye promptly excise prolapsed uveal tissue and cover with a sliding conjunctical flap. Other prophylactic measures are: Foreign protein therapy, salicylates, sulfonamides, or neoarsphenamine.

Naturally, if an eye contains a foreign body an attempt will be made to remove it.

After sympathetic ophthalmitis has developed medical treatment consists of atropine locally and administration of foreign protein therapy, salicylates, neoarsphenamine, and recently of sulfonamides. Treatment must be continued about one year.

Some recent American statistics of 125 cases show about 50 per cent retained useful vision and the inflammation subsided.

CASE 1: B. W., eight year old girl. August 15, 1938, right eye was injured with scissors. Cornea was lacerated or cut in its entire thickness, extending from about location of 9 o'clock, 3 mm. from limbus, up and nasalward to limbus at location of 1:30 o'clock. Iris was torn at upper end of laceration, but there was no visible prolapse or iris. Blood filled pupil area and extended to within about 2 mms. of limbus. Lens was also injured. I saw her soon after the injury. I instilled atropine three per cent solution and mercuric chloride ointment 1-5000, applied eye pad, also gave 2 cc. Omnadin intramuscularly. I dressed the eye the following day and gave Omnadin, 2 cc. I dressed the eye daily for four more days and two days later removed the dressing and ordered atropine one per cent three times a day. I saw her every alternate day for two more visits then saw her eight days later and at that time observed a few Keratitic Precipitates. Dr. E. S. Ferguson saw her in consultation, the nineteenth day after injury. One week later right eye appeared whiter and presented less Keratitic Precipitates. Ordered Salicionyl (Upjohn) one teaspoon every two hours for five doses then one teaspoon three times a day. One week later the eye appeared slightly improved, was again seen by Dr. Ferguson. After one more week right eye appeared to be slowly improving. This was forty days after the injury and I advised that she return after two weeks. But she returned three days later at 7:30 P. M. and her mother stated when she awakened that morning both eyes were injected but not uncomfortable. I found both eyes only mildly injected, very faint ciliary injection in left eye. No visible congestion in iris, but there was a small spot of exudate on anterior lens capsule. The following morning there were definite posterior synechia at 5 o'clock and 7 o'clock. That morning I enucleated her right eye. Instilled atropine in left eye at 4 P. M. That day 6 cc. calcium gluconate was given I. V. for carpopedal spasm. 7:30 P. M. that day boiled milk was given intramuscularly. Temperature was 101 rectal. The following day Sulfanilamide grains five three times a day, also Codliver oil and Viosterol were ordered. The following day boiled milk was given intramuscularly, temperature 103 oral. After six days of Sulfanilamide it was reduced to give grains three times a day and boiled milk intramuscularly gave temperature 101 rectal. Three days later typhoid vaccine I. V. gave temperature 106. Three days later typhoid vaccine I. V. gave temperature 103.4. Three days later typhoid vaccine I. V. gave temperature 100.8. The following day, October 15, discontinued Sulfanilamide. Three days later started Salicionyl (Upjohn) one teaspoon every three hours for five doses each day. The following day she went to Mayo Clinic and she was given two injections of typhoid vaccine I. V. Dr. Bair advised repeat course of typhoid vaccine I. V., until the inflammation subsided and kept well under atropine, each course to consist of injection each alternate day for six doses and rest seven to ten days. This was done until April 15th and before starting another course April 24th, routine blood count showed 24,250 WBC with 61 per cent lymphocytes. Daily blood counts were made and typhoid vaccine was discontinued. Tuberculin treatment was also stopped. Tuberculin treatment in gradually increased doses

was begun January 31, 1939, after two negative tuberculin skin tests.

White count had returned to approximately normal by May 15. May 22 another course of typhoid vaccine was given. On May 28 patient again went to Mayo Clinic and again the advice was to continue courses of typhoid vaccine until inflammation subsided.

Septic adenoids and tonsils were removed by Dr. W. L. Bonham November 28, 1938.

I inquired of Dr. Webb W. Weeks, New York City, whether I should use uveal pigment. He replied that he had never been satisfied with the use of uveal pigment in sympathetic ophthalmia.

The general medical management and intravenous therapy and vitamin therapy was done by Dr. Harry L. Deupree.

The patient to have recurrent attacks of redness (Iridocyclitis) until October 9. 1939. I saw her again in February, 1940, and vision was limited to light perception. The eye was quiet but soft and had complete cataract and occulsion of pupil. She was placed in the Oklahoma School for the Blind. Her parents told me she lost all light perception. Diagnosis by Col. J. E. Ash, Army Medical Museum: Sympathetic Ophthalmia.

CASE 2: Mrs. L. W. Age 80. When I saw her on August 28, 1942, had intraocular tension of 40 Schioetz. This eye was treated with miotics until September 17, 1942, when I did an iridencleisis operation. Convalescence was slow. On October 17, 1942, she stated that the right eye had been uncomfortable about three days. On examination I found a slight ciliary injection and a posterior synechia at location of 6 o'clock. Patient was unable to be taken to a slit lamp. Obtained consultation, feared sympathetic uveitis, and that night at 8 P. M. enucleated the left eye. Thirty-six hours later used three per cent atropine in right eye. After 24 hours the posterior synechia was gone. Patient had been slightly distracted, perhaps from atropine, therefore, it was not used again. Neoprontosil grains 15 every four hours was given. After four days it was stopped because of nausea and dizziness. The eye showed no further progress of inflammation. In fact, gradually returned to normal. I last saw her October 9, 1945, and there was no trace of uveitis. Diagnosis by Col. J. E. Ash, Army Medical Museum: Arteriosclerosis; hemorrhagic glaucoma; iridenclesis operation; sympathetic ophthalmia; cataract.

CASE 3: Mrs. O. G. Age 64 years. Had hayfever for 30 years or more. On October 20, 1943, had a cataract extraction intracapsular. McLean corneoscleral sutures peripheral iridectomy and conjunctival flap, over upper one third of cornea, done at Amarillo, Texas. This patient came to me February 4, 1944, with the statement that the right eye had remained irritable and uncomfortable since the operation. The left eye had also become painful and inflammed. She had severe headaches in the region of the forehead and in the maxillary area since about three weeks after operation. Findings: Right eye does not see light. Marked ciliary and conjunctival congestion plastic iridiocyclitis and pupil obliterated. Unable to see fundus. Tension soft. Left eye marked ciliary and conjunctival congestion, keratic precipitates, iris congested. Many small posterior synechia, lens opaque, light perception and projection are present.

On February 17, 1944, right eye was enucleated.

Diagnosis by Col. J. E. Ash, Army Medical Museum: Cataract extraction; prolapse of iris; sympathetic ophthalmia; hemorrhage, intra-ocular, organizing; detachment of retina.

Treatment: Patient was given 25,000,000 typhoid organisms I. V. on February 18, 1944. The following day was given 35,000,000 I. C. and two days later was given 50,000,000 I. V. After the first injection her temperature was above 102 for over six hours. On the following day the maximum temperature was 103.4. After the third dose her temperature reached 103. Two days later Neoprontosil grains ten, every four hours day and night. On the following day blood determination of neoprontosil was 1.3 mg/100 cc. On the following day the blood determination of neoprontosil was 1.8 mg/100 cc. Neoprontosil was increased to 20 grains every four hours day and night on the 24th. On the 25th neoprontosil was increased to 30 grains day and night. On the 27th blood determination of neoprontosil equals 3.3 mg. per cent. On February 27, reduced neoprontosil to grains ten every four hours. On February 29 stopped neoprontosil after 8 P. M. Ordered Unicaps one two times a day. On March 5 salicylates every four hours day and night.

Discharged from hospital March 14, 1944, to continue vitamins, atropine and to use salicylates twice a day. Local atropinism developed and atropine was stopped April 23,

1944. Stopped treatment June 29, 1944. The eye was comfortable but soft and shrinking.

Last saw patient May 16, 1945. Vision was limited to light perception in the temporal field.

COMMENT

I think Mrs. L. W. had insufficient medication to explain her recovery, and I quote Fuchs as follows: "The beginning (in the sympathizing eye) is often insidious. In conjunction with an insignificant reddening of the eye, deposits — which are never wanting in the beginning of a sympathetic ophthalmia — appear upon the cornea. Then a few posterior synechiae and fine opacities in the vitreous develop, and the ophthalmoscope shows hyperaemia of the retina and optic nerve. In favorable cases the disease reaches no higher pitch and at length gets well, leaving either no trace of its presence or a few posterior synechiae. Unfortunately such mild cases are the exception."

CONCLUSION

Sympathetic ophthalmia has been reviewed. Three cases have been reported, one of which recovered. The treatment of most importance is prophylaxis. After sympathetic ophthalmia has developed it should be treated with atropine, foreign protein, salicylates, and sulfonamides.

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AMPUTATION OF THE LOWER EXTREMITIES IN PERIPHERAL VASCULAR DISEASE*

W. PAT FITE, M.D. AND

CHESTER K. MENGEL, M.D.

MUSKOGEE, OKLAHOMA

It is the purpose of the authors of this paper to discuss only those cases in peripheral vascular disease that come through amputation; not to enter into consideration of the preliminary treatment that each case may have had.

The diseases to be discussed are: (1) Buerger's disease; (2) Arteriosclerotic gangrene; (3) Diabetic gangrene; (4) Thrombosis, arterial; (5) Frost-bite.

We have performed various types of amputations of the lower extremities in 63 cases since 1931. Of these, the majority have been for Buerger's dsease, 32; arteriosclerotic gangrene, 13; diagetic gangrene, 8; thrombosis, arterial, 7; and frozen feet, 3. Prior to 1931 we believe that we erred on the side of conservatism in this class of cases, as we had to do many re amputations. Since 1931, our attitude has considerably changed, and as the records will show in these 63 cases, there have been relatively few reamputations. The majority of those done were in cases that were amputated below the knee, and that chiefly on account of the importunity of the patient.

Prior to 1936 we did most of our amputations through the lower portion of the thigh after the method of Gritti-Stokes. Of these there were 19. Since 1936 virtually all amputations in the lower third of the thigh have been after the method of Callander. Fourteen were done through the midthigh. The Gallander type of amputation was eventually adopted in place of the Gritti-Stokes because it gives practically the same type of stump, except that it is simpler to do and is slightly shorter than the Gritti-Stokes amputation, and no bony union is involved. The last two features aid somewhat in the fitting of an artificial limb. The midthigh amputation was resorted to in three cases in which the lower amputation of the thigh did not heal satisfactorily, and in those cases in which the circulatory condition of the limb made it evident that nothing less than a higher amputation would suffice.

Bilateral amputation was necessary in 13 cases of Buerger's disease, two cases of arteriosclerotic gangrene, and one case of frost-bite of the lower extremity.

There were eight cases in which reamputation was necessary, all following amputations done for Buerger's disease, and of these

*Presented before the Section on Surgery, Oklahoma State Medical Association, Annual Meeting, May 3, 1946.

Diagnosis	Patients	Ampt. below knee	Ampt. above knee	Complications	Reampts	Average Age
Buerger's disease	32	6—toes 15	30	1 died of thrombosis of abdominal aorta	8	43.9
Arteriosclerotic gangrene	13	0	13	2 died later in hosp. with generalized causes	0	61.7
Diabetic gangrene	8	0	8	0	0	56
Thrombosis arterial	7	4	3	1 died in hosp. coronary thrombosis	0	48
Frozen feet	3	1—toe 1	2	1 died following surgery	0	45
TOTAL	63	27	56	5	8	

five were for amputations below the knee. Three were for amputations above the knee.

Of the 63 amputations, 15 were done below the knee in Buerger's disease. None in either ateriosclerotic gangrene nor diabetic gangrene. Four were done in arterial thrombosis, and one for frozen feet.

Buerger's disease: Thirty-two cases were amputated. Fifteen were first amputated below the knee; five had to be reamputated above the knee. In one case, six toes were amputated. Three, who had either Gritti-Stokes or Callander amputations, had to be amputated through the middle of the thigh at a later date. One of these patients died while in the hospital with thrombosis of the abdominal aorta. The average age of the 31 cases was 43.9 years.

As an example of a group of complications that can occur in the case of Buerger's disease, consider the case of P. L., age 45, 1942. 1922: Amputation, right big toe; 1926: Amputation, left big toe; 1930: Ganglionectomy; 1931: Amputation, four toes, right; 1931: Amputation second toe, left; 1932: Ramisectomy; 1932: Amputation right leg, below knee; 1933: Reamputation, right leg, middle third; 1935: Amputation, two toes, left; 1942: Callander amputation, left; 1944: Amputation, right thigh.

Later in 1944 he died of abdominal complications following extensive involvement of the abdominal vessels with thromboangiitis obliterans.

This man was virtually a continuous hospital patient from 1922 until his death in 1944. Would it not have been better from the standpoint of the hospitalization and the comfort of the patient, if he had had a bilateral amputation through the lower third of the thigh, as soon as it became evident that more than the amputation of a toe or two was necessary?

Arteriosclerotic gangrene: Thirteen of these cases were amputated. All were amputated above the knee. Two died later in the hospital, with causes unassociated with the amputation. The average age of these patients was 61 years.

Thrombosis, arterial: Seven cases. Four were amputated below the knee; three above the knee. One patient died later with coronary thrombosis before discharge from the hospital. The average age was 48 years. In these cases, it has been our practice to wait for a fairly well defined line of demarcation before determining the level of the amputation. It is noted that in slightly more than 50 per cent of these cases it was necessary to amputate through the lower thigh.

Frost-bite: Three cases. One of these had only the amputation of several toes. Another had an amputation below the knee, and the third, a double amputation through the mid-thigh. This last case died shortly following the operation. Although he was in very poor general condition as a result of his bilateral frost-bite, he is reported as a surgical death. The average age of these cases was 45 years.

It is interesting to note that the man who had an amputation of several toes, suffered from trench foot in the first World War. Some years later he suffered another frost-bite, which resulted in the amputation of one of his toes. This is mentioned because so far as we have observed no case of trench foot suffered in the first World War has had to be subjected to an amputation on that account; nor has trench foot seemed conducive to later peripheral vascular disease of the unusual types.

Anesthesia: A low spinal anesthesia has been used consistently throughout all of these operative procedures with few exceptions, those in which we tried refrigeration anes-

thesia. The refrigeration anesthesia was satisfactory as far as the anesthesia was concerned. The cases in which it was used had no shock. The healing was slow, but without complications. It requires a lot of time and trouble, but we can see no special advantage in it over a low spinal anesthesia, as that is devoid of shock, is quickly and easily administered, and is not attended with the possibility of nerve degeneration in the stump. General anesthesia has been used in none of these cases. One midthigh in an 82 year old man was amputated under local. Refrigeration is used as a bio-static agent distal to the anticipated level of amputation.

CONCLUSIONS

(1) In peripheral vascular disease, if an amputation is necessary proximal to the toes, with the exception of frost-bite and arterial thrombosis, a Callander type of amputation is preferred unless the condition of the limb indicates that a higher level should be chosen.

(2) Amputation below the knee in arteriosclerotic gangrene, diabetic gangrene, and Buerger's disease, are hardly justified on a conservative basis, as they will undoubtedly lead to a high ratio of reamputations because of various complications of the stump.

(3) A low spinal anesthesia is preferred.

ELECTROENCEPHALOGRAPHY IN THE DIAGNOSIS OF EPILEPSY*

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PAULS VALLEY, OKLAHOMA

The secretary of this Section asked that some discussion be made of the pneumoencephalogram. As it would not be possible to do justice to both pneumoencephalography and electroencephalography in the diagnosis of epilepsy in one paper, perhaps my discussant who has had much experience in pneumoencephalography, may be able to devote considerable of his time to this particular diagnostic procedure.

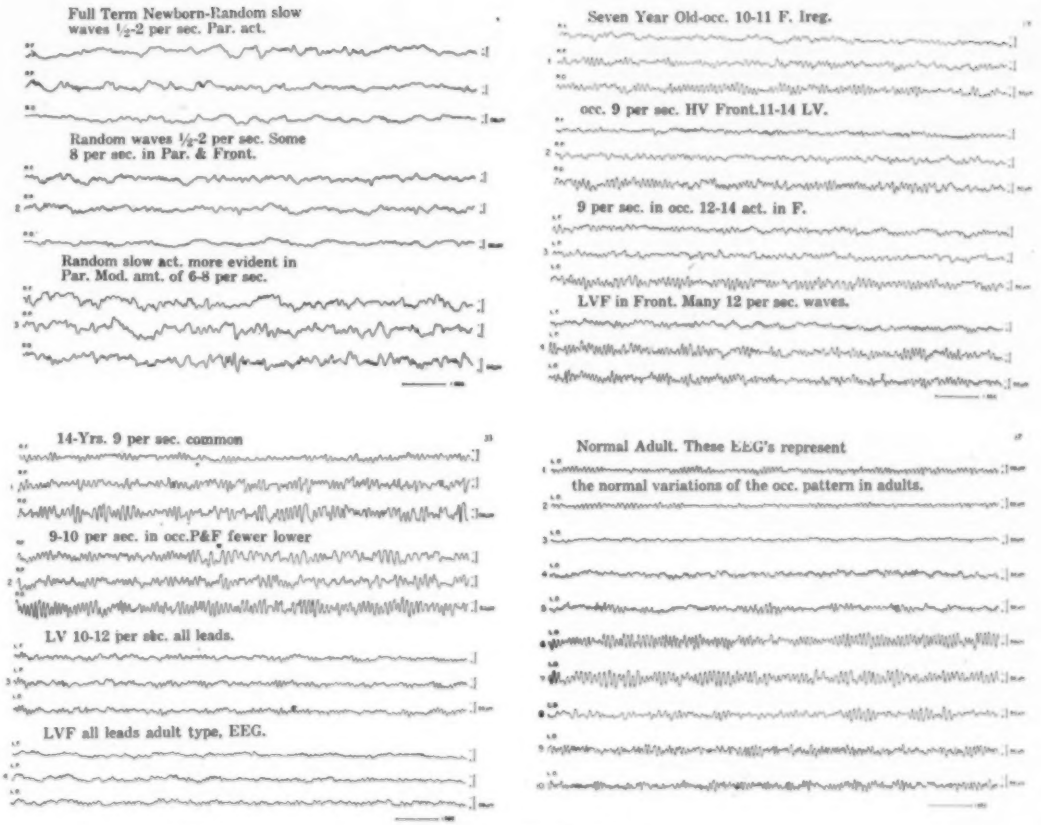
In this talk the ABC's of the electroencephalogram (EEG) as applied to the idiopathic or essential type of epilepsy will be discussed. In order to show the abnormal a preview of the normal will be given so that the two may be compared. To be of most value the definition of epilepsy as a "cerebral dysrythmia" should be kept in mind. As early as 1854 a rhythm of the neurons of the brain had been suspected and studied, but it remained for Hans Berger, the father of electroencephalography, to establish definitely that there was a rhythm or beat to the brain, and that it was coming from a neuron. This compares with the rhythm of the heart beat, respiration, nerves and very likely other mechanisms. In the nerves we know that there is a tendency toward decrease of amplitude and increase of frequency upon stimulation and this holds true of the neuron.

*Presented at the Annual Meeting, Oklahoma State Medical Association, Section on Neurology and Psychiatry, Wednesday, May 1, 1946.

The electroencephalograph is essentially a receiving and recording instrument, the impulses coming in through contacts firmly attached to the scalp over different areas of the cortex and recorded graphically upon a sensory surface much as other recordings are made. The frontal, the parietal, and the occipital lobe areas are most frequently used, but electrodes may be attached anywhere and as many as are desired. The recordings taken are measured in terms of frequency per second and of amplitude or excursion in terms of microvolts. The normal adult frequency is about 10 per second; the amplitude about 50 microvolts. Other terms used, dependent upon variations in frequency and amplitude, are LVF (low voltage fast); LVS (low voltage slow); HVF (high voltage fast); HVS (high voltage slow). The "base line sway" is a sinusoidal wave composed of smaller, superimposed waves.

THE NORMAL INFANT

Considerable variation is seen between the brain waves of the infant and of the adult (Figure 1). At birth there is a so-called random slow wave movement, one-half to two per second, the base line sway, with faster activity superimposed. At six days of age there is a similar picture but some eight per second activity is seen in parietal and frontal leads in this particular recording. At nine days there is a moderate amount of eight


Full Term Newborn-Random slow waves ½-2 per sec. Par. act.
Random waves ½-2 per sec. Some 8 per sec. in Par. & Front.
Random slow act. more evident in Par. Mod. amt. of 6-8 per sec.
Seven Year Old-occ. 10-11 F. Irreg.
occ. 9 per sec. HV Front.11-14 LV.
9 per sec. in occ. 12-14 act. in F.
LVF in Front. Many 12 per sec. waves.
14-Yrs. 9 per sec. common
9-10 per sec. in occ.P&F fewer lower
LV 10-12 per sec. all leads.
LVF all leads adult type, EEG.
Normal Adult. These EEG's represent
the normal variations of the occ. pattern in adults.

Figures 1, 2, 3 and 4

per second activity while the base line sway is still in evidence.

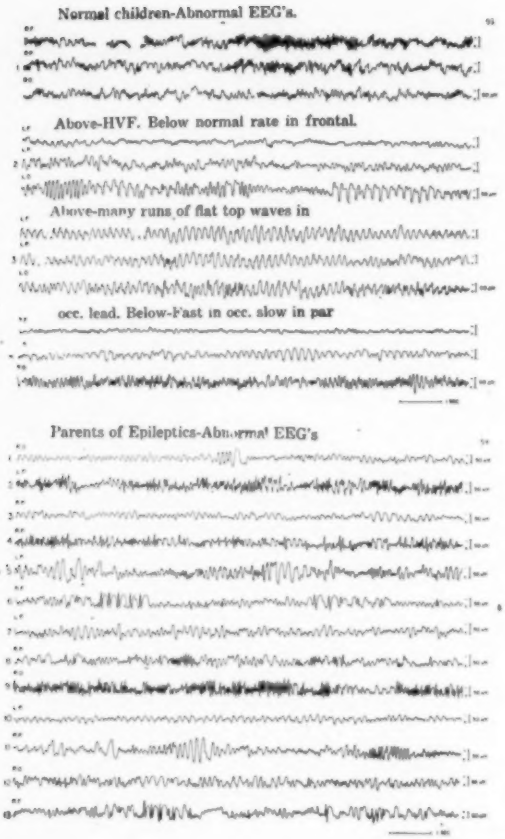
At one year the base line sway is still evident, but under modification; LVF waves occur more frequently; five to six per second waves predominate with an occasional intrusion of nine to ten per second waves.

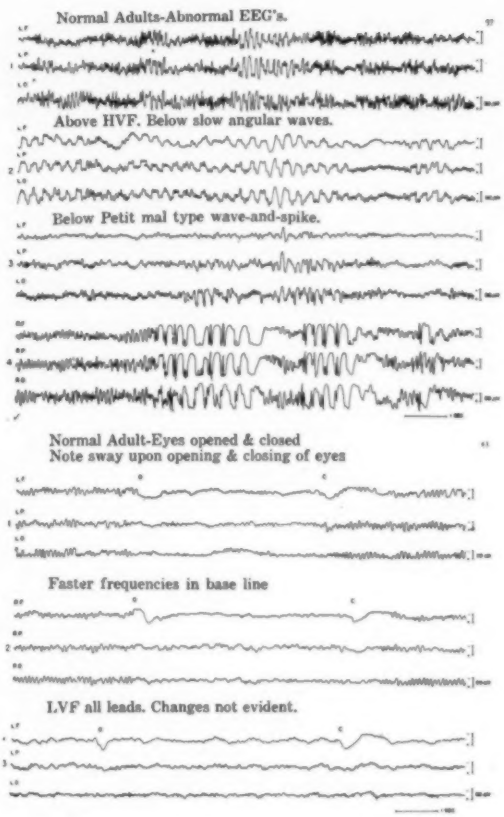
Time and space do not permit an uninterrupted review of each year's change but at seven years we have a juvenile type (Figure 2), featuring an irregularly slow and fast adult frequency at nine to eleven. The occipital lead seems to be the most consistent in frequency and higher in voltage. By the age of 14 (Figure 3) 30 per cent of children have an essentially adult type of EEG. The waves are less fluctuating, about nine to ten in occipital lead, but runs of four to six per second up to the age of 19 may be considered normal, depending upon the number. In the plates recorded the adult EEG (Figure 4) represents the normal variations in the occipital lead, and here the rhythm runs about nine to twelve per second, but there are bursts of LVF. The base line sway may be seen much less marked than in children.

EFFECT OF STIMULATION

In Figure 8 we observe the effect of a stimulus. With eyes closed we have a normal ten to eleven per second activity. Opening them causes immediate faster movements, but lower amplitude. Close the eyes and the former rhythm prevails. Theoretically, at least, simulated blindness could be detected as opening the eyes should not cause fluctuation if they are insensitive to light.

The effect of sleep upon the EEG begins at Stage A with fluctuations ten to eleven per second, followed 15 minutes later by the appearance of slower but occasionally faster waves, Stage B; light sleep, HVS with occasional bursts of fast 14 to 16 per second, Stage C. At Stage D, moderately deep sleep, voltage still is high, with four to five per second frequency, but numerous 14 to 16 bursts. Stage E, deep sleep, there are random slow waves and of very high voltage with


Normal children-Abnormal EEG's.
Above-HVF. Below normal rate in frontal.
Above-many runs of flat top waves in
occ. lead. Below-Fast in occ. slow in par
Parents of Epileptics-Abnormal EEG's


Normal Adults-Abnormal EEG's.
Above HVF. Below slow angular waves.
Below Petit mal type wave-and-spike.
Normal Adult-Eyes opened & closed
Note away upon opening & closing of eyes
Faster frequencies in base line
LVF all leads. Changes not evident.

Figures 5, 6, 7 and 8

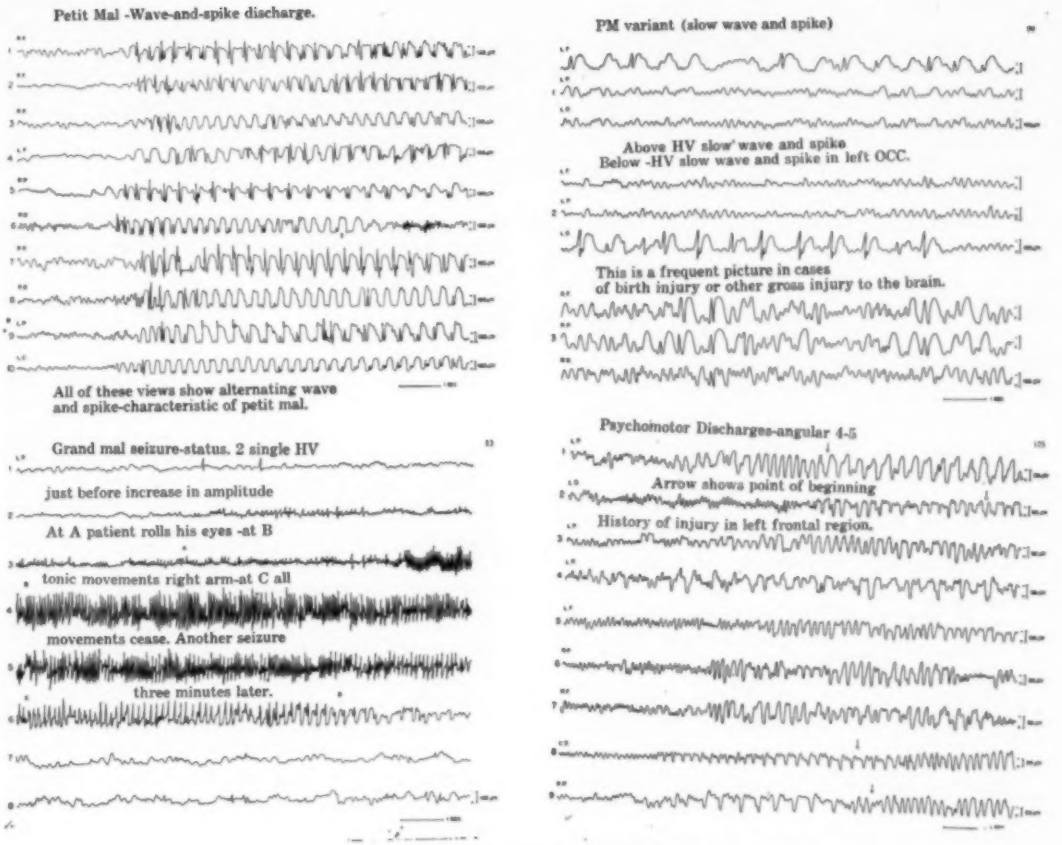
occasional 14 to 16 per second bursts. In Stage F the 14 to 16 bursts have disappeared and at 2:15 A. M. irregularities in rhythm and low voltage have appeared and remain until patient is awake at 7:00 A.M. at which time he resumes his continuous ten per second activity.

An EEG is shown of normal children with abnormal findings (Figure 5). There is no history of familial nervous or mental disease, nor history of convulsions. In these there are marked changes in rate and voltage in several combinations. In an illustration representing EEG's of normal adults (Figure 6) we have an even more noticeable divergence from the normal. There is HVF alternating with six to seven per second, a picture very similar to that seen in grand mal discharges. Others show psychomotor and larval seizure types of EEG's. The parents of epileptics (Figure 7) show a considerably greater number of variations from the normal than do parents of normal children. These variations may occur in frequency, amplitude and shape of the waves. In some instances they are frankly epileptoid in character.

EEG'S OF EPILEPTICS

All of the illustrations shown have been taken from the very informative atlas by Dr. F. A. Gibbs and Dr. Erna L. Gibbs, who divide the epileptic electroencephlograms into four groups, the petit mal, petit mal variant, grand mal and psychomotor seizures. The petit mal (Figure 9) is represented by an alternating wave and spike formation with a repetition of three times per second. In this type there is transient loss of consciousness but no convulsions.

The petit mal variant (Figure 10) has a slow wave and spike. In all of these recordings there is presumptive evidence of brain pathology in the patient; one patient was a forceps delivery and one had a cerebral hemorrhage at birth, while the other had early


Petit Mal -Wave-and-spike discharge.
All of these views show alternating wave and spike-characteristic of petit mal.
Grand mal seizure-status. 2 single HV
just before increase in amplitude
At A patient rolls his eyes -at B
tonic movements right arm-at C all
movements cease. Another seizure
three minutes later.
PM variant (slow wave and spike)
Above HV slow wave and spike
Below -HV slow wave and spike in left OCC.
This is a frequent picture in cases of birth injury or other gross injury to the brain.
Psychomotor Discharges-angular 4-5
Arrow shows point of beginning
History of injury in left frontal region.

Figures 9, 10, 11 and 12

convulsions and muscular incoordinations. This type is seen quite often in traumas at birth or later.

The distinguishing feature of the grand mal type of EEG (Figure 11) is the high voltage spikes. These spikes are probably the most consistent of all findings and may occur with petit mal wave and spike and even with myoclonic jerks, lending credence to the idea that petit mal and grand mal and some of the myoclonias are related if not identical. The clinical picture of the grand mal seizure we all know.

Probably the most interesting pattern as well as clinical manifestation is seen in the psychomotor seizure patient (Figure 12). The wave pattern is about four to six per second, and typically has a flat top. The so-called epileptic equivalents belong in this group. These may consist of amnesic states, somnambulism, fugues, attacks of abnormal rage, and behavior disorders. The seizures are characterized by irrational, but apparently purposeful movement, impairment of consciousness, with emotional out-bursts of rage, anxiety, discomfort or fear. Hallucinations and delusions may be very prominent, but the patient may be entirely unconscious of his acts.

A. M. A. PLANS FOR CENTENNIAL SESSION

Arrangements are being made to make the A. M. A. Centennial Session, at Atlantic City, June 9 to 13, 1947, "one of the greatest and most interesting medical assemblages ever convened". Each scientific section will feature a distinguished speaker from abroad.

The Oklahoma State Medical Association will sponsor a special train at Atlantic City, with a side trip to New York City, Canada and Niagara Falls. A wonderful 17 day trip in all! Watch the Journal for details.

CLINICAL PATHOLOGICAL CONFERENCE

The School of Medicine of the University of Oklahoma

Presented by the Departments of Pathology and Medicine

F. REDDING HOOD, M.D. AND HOWARD C. HOPPS, M.D.

DR. HOPPS: Our case today illustrates some uncommon effects of a relatively common disease and affords an excellent opportunity to discuss unusual aspects of the pathologic physiology and pathologic chemistry of heart failure. We are fortunate in having Dr. Hood to discuss and analyze the clinical aspects of this case. Dr. Hood never saw this patient nor has he been given any information save that included in the mimeographed protocol which you received two days ago.

PROTOCOL

Patient: C. N., white male, age 41; admitted December 6, 1945; died February 2, 1946.

Chief Complaint: Dyspnea, orthopnea and abdominal swelling and tenderness.

Present Illness: This 41 year old white male had had acute rheumatic fever at the age of three and one-half years and this was followed by chorea. A second acute attack (without chorea) was experienced at 13 years. There were no recognized signs or symptoms of cardiac failure following either of these attacks. About ten years ago (age 31 years) the patient noticed a "squeaking" sound, synchronous with the heart beat, when he lay on his left side. Soon after this there was marked palpitation of the heart upon physical exertion. This continued and shortly thereafter there was dyspnea upon exertion which was progressive. At times there would be dull precordial pain also. These symptoms necessitated more and more restriction of physical effort until finally, for the last five or six years, the patient has been unable to work at all. About three year ago (1943) he consulted a doctor who prescribed digitalis. After five to six months of this medication the patient was so improved that he discontinued the drug. He remained more or less asymptomatic (marked restriction of activity) until about seven months before his death at which time he noticed that his feet and ankles were swollen and also his abdomen began to be distended. Again he consulted a physician who prescribed digitalis and administered some intravenous medicament (mercurial diuretic?). There was temporary improvement but soon he became nauseated and this was attributed to too much digitalis. Nausea persisted to the time of admission and symptoms and signs of cardiac failure became progressively worse. He was first seen at the Outpatient Department on December 6, 1945, and was admitted to the University Hospital on the same day.

Past and Family History: Fifteen years ago malaria was diagnosed by blood smear and apparently cured within three or four months.

Physical Examination: The patient was a well developed and fairly well nourished, pale white male propped up on three pillows with obvious respiratory difficulty. Temperature was slightly subnormal. Crepitant rales were heard at both lung bases on inspiration and expiration. There was no dullness. The heart was markedly enlarged and extended to the anterior axillary line in the sixth interspace. The apical impulse was diffuse. "Double mitral murmur is present and systolic transmitted to axilla. Systolic murmur is heard over all other valve areas also." The rhythm was absolutely irregular. Blood pressure was 128/70 and pulse 60. The liver extended to the level of the umbilicus and was tender. The spleen was questionably palpable. No fluid was demonstrable. There was no edema of the ankles upon admission.

Laboratory Data: Upon admission hemoglobin was 14 Gm. per cent, red blood cells 5.28 and white blood cells 10,350/cu.mm.

Upon urinalysis maximum specific gravity was 1.015 (Mosenthal) and there was 1 plus proteinuria and occasional white blood cells. Subsequent determinations revealed little change save that the white count dropped to 5,900-7,200. Plasma proteins were within normal on admission. The icteric index was reported as high as ten; the cephalin flocculation test was plus/minus at 24 hours and 2 plus at 48 hours. Following administration of bromsulfalein, at five minutes the value was 20 per cent and at 30 minutes 14 per cent. Prothrombin time was normal. A smear for malaria was negative. Electrocardiograms indicated right ventricular preponderance. X-rays showed cardiac enlargement with pulmonary congestion.

Clinical Course: The patient was given digitalis and salyrgan on several occasions with moderate relief. In spite of quinidine, auricular fibrillation persisted. Although there was apparent improvement of the "cardiac condition", edema of the lower extremities developed, and the patient did not feel well, — he had little appetite and he slept poorly. Orthopnea and dyspnea were constantly present. On January 8, 1946, (33rd hospital day) plasma proteins were 3.2 per cent with A:G = 2.2/1.0 and ten days later 2.7 with 1.3/1.4. There was considerable question as to whether or not hepatic disease was a major factor in this condition. On the 68th hospital day the patient developed marked pulmonary edema and became very dyspneic and apprehensive. Aminophyllin and morphine gave but transient relief. Pulmonary edema became progressively more marked, cyanosis developed and the pulse became gradually reduced in both intensity and rate. The patient expired approximately 28 hours after "marked pulmonary edema" was first noted.

CLINICAL DIAGNOSIS

DR. HOOD: The initial complaints of dyspnea, orthopnea, abdominal swelling and tenderness immediately suggest a primary disease in either the lungs or the heart. From the present illness we learn that 38 years ago, at the age of three and one-half years, the patient had rheumatic fever followed by chorea. Chorea complicates rheumatic fever approximately one time in two or three and is more often seen in the female. When chorea is associated with rheumatic fever there is a pronounced decrease in the tendency toward residual cardiac disease. The patient had rheumatic fever again at the age of 13 years and this time he did not have chorea. From the history then, we have a definite basis for the development of organic heart disease. A period of 18 years elapsed without evidence of untoward signs or symptoms when, at the age of 31, the patient first noticed a squeaking sound, synchronous with the heart beat. This is a rather bizarre symptom and must be carefully evaluated; it may be very significant or, on the other hand, it may mean very little. Pericarditis may produce such a symptom, and pericarditis often accompanies acute rheumatic fever. Rarely would it occur at this late date. We do not have sufficient data to determine with certainty whether or not this symptom was associated with pericarditis. Pericarditis of rheumatic origin does not usually become adhesive and other types of pericarditis are usually associated with fever and leukocytosis. Rheumatic fever, as such, does not ordinarily produce pain, whereas pericarditis often does. We are told that the patient experienced pain and palpitation with this squeaking sound and I am inclined to interpret this as an effect of adhesive pericarditis. We must bear in mind however that cardiac dilatation, with or without hypertrophy, may produce the same signs as pericarditis. A progressive increase in these symptoms, along with exertional dyspnea, made it necessary for the patient to restrict his activity more and more until finally, after four or five years, he was unable to work at all. It is noteworthy that he did not complain of dependent edema or pain and tenderness of any abdominal viscera. With this, we would expect that the major organic defect involved the mitral valve. It is possible that the aortic valve was also affected. The lesion must have been in the left side of the heart in order to produce signs and symptoms of pulmonary congestion. Following treatment for a time, with digitalis, he improved considerably and remained much improved for several years until he had another exacerbation. Following treatment with digitalis a second time, he became nauseated and this was attributed to too much digitalis. It is important to remember that nausea, under such conditions, may come about either from too much or *too little* digitalis.

Data obtained at physical examination supports our previous contention. The lungs exhibited only those signs which we would expect as a result of pulmonary congestion. Information concerning the heart is incomplete. The heart was enlarged and the P. M. I. was diffuse which is good evidence that the

heart was dilated as well as hypertrophied. The mitral murmur is poorly described in that the degree of force and variation of sound throughout its course is not described, nor is it precisely localized. There are many types of lesions which can produce a "double" mitral murmur. There has been much controversy over whether or not pure mitral insufficiency can occur upon an organic basis and I should like to have Dr. Hopps express his views on this subject. I should like to discuss, in detail, the characteristics of various murmurs such as the Graham Steele and the Austin-Flint murmur, but my time is almost up. The irregular irregularity of cardiac rhythm is indicative of auricular fibrillation and we know that a common cause of this is mitral stenosis. To me there are but three indications for the use of quinidine: (1) an abnormal rhythm arising in the ventricles, if it cannot be controlled otherwise; (2) auricular flutter, when it cannot be converted into a normal rhythm by digitalis and (3) for the conversion of auricular fibrillation when there has not been irreversible cardiac damage and when the etiologic factor has been removed, e.g., thyrotoxicosis. I am firmly opposed to the use of quinidine in auricular fibrillation such as this man manifested because, first, there is great danger of dislodging auricular thrombi with resulting serious or even fatal embolic phenomena. Even though quinidine might change fibrillation to a normal rhythm, the underlying organic defect would not be altered and whenever the quinidine was stopped, there would be reconversion back to fibrillation. Secondly, the ventricular rate can more easily be controlled by digitalis in the continued presence of auricular fibrillation.

CLINICAL DISCUSSION

DR. HOPPS: One of the things which concerned us most was that in spite of apparent improvement of the cardiac condition, the patient developed a new set of signs and symptoms characterized principally by the development of dependent edema, marked hypoproteinemia and, finally, a rather sudden episode of progressive marked pulmonary edema. Would you comment upon this aspect of the case Dr. Hood?

DR. HOOD: These findings suggest an hepatic insufficiency and may be related to marked congestion of the liver. There is the possibility too that this condition may have been complicated by nephrosis and that renal disease was responsible for these manifestations.

ANATOMIC DIAGNOSIS

DR. HOPPS: It is rather obvious that this man had several attacks of rheumatic fever and that he suffered from organic heart disease. It seems fairly certain too that his heart was hypertrophied and dilated, that he had auricular fibrillation and probably mitral valvular disease. It is far from obvious however why he developed such a marked hypoproteinemia terminally with marked edema of the extremities, and why he rather suddenly exhibited a marked progressive pulmonary edema which brought about his death in 28 hours.

To clarify the first point we must first consider the usual effects of chronic passive congestion of the liver. Those of you who have consulted the various texts in relation to this point, know that even severe congestion of the liver does not usually lead to detectable hepatic deficiency. This seems rather odd when upon histologic analysis we find evidence of marked centro-lobular atrophy, additional degenerative changes of the periphero-lobular tissues and various degrees of fatty change. Its explanation lies with the relatively enormous hepatic reserve with which nature has seen fit to provide us. Actually, the normal hepatic functions can be carried out with but from 1/8 to 1/11 of the liver. This, incidentally, is the explanation of why hepatic function tests become altered only in the face of marked hepatic disease. We must assume that in this patient some process had affected the liver, perhaps gradually and without obvious effect, until almost all of its reserve capacity was lost. After such a loss of hepatic reserve, any further effect, especially if the process were accelerated, would bring about a more or less *sudden* manifestation of hepatic deficiency even though 80 to 90 per cent of the liver were *previously* destroyed. The most obvious effect of hepatic deficiency in this case was the marked drop in plasma proteins. Without an abnormal loss of protein such as would result from marked proteinuria, draining fistulae, exudating wounds, etc., a rapid drop in plasma proteins can only be explained by defective production of plasma proteins. Although toxic necrosis of the liver or possibly cirrhosis might explain this turn of events, we found, at necropsy, that the liver was approximately 40 per cent enlarged (2150 grams) and exhibited the marked nutmeg mottling characteristic of chronic passive congestion. Microscopically we found very marked passive congestion with extensive central necrosis involving perhaps 90

per cent of the parenchyma. That tissue not necrotic exhibited marked degenerative changes. Associated with this there was considerable increase in periportal connective tissue to a degree which warranted a diagnosis of early cirrhosis. Was this cardiac cirrhosis? So-called cardiac cirrhosis is actually an ill-defined entity in spite of the standard description given in most texts. Some persons consider that cardiac cirrhosis is characterized principally by centro-lobular fibrosis, but I do not believe that this is the usual case. Since the major portion of interstitial fibrous tissue lies normally in the portal areas, any diffuse stimulus, even though it be most marked in the centro-lobular area, may stimulate fibroplasia which begins and is most pronounced in the periportal regions.

With regard to the terminal episode of pulmonary edema we must consider two possibilities — either a primary left-sided heart failure of sudden onset, or multiple recent pulmonary infarcts. In this particular case, necropsy revealed the primary change to be in the heart. The heart weighed 470 grams, approximately one and one-half times the normal weight. Especially the right ventricle was hypertrophied and its wall was approximately four times the normal thickness. There was but slight dilatation at the time of necropsy. The mitral valve cusps were considerably thickened especially at the line of closure. Chordae tendinae were thickened up to four or five times, more opaque than usual and at their point of origin from the papillary muscles, there was focal scarring. The cusps were not fused to each other and there was no stenosis. There was moderate insufficiency, however, and the explanation for this will answer Dr. Hood's question. In this case, as frequently occurs following rheumatic fever, the chordae tendinae and tips of papillary muscle become fibrosed and, in the course of time, this scar tissue contracts to shorten these structures. As a result of this, the mitral valve cusps are prevented from coming into apposition and hence a morphologic basis for mitral insufficiency. This then was the basis for the heart failure and the marked pulmonary congestion which we found. The aortic valve was involved to a lesser extent and probably did not contribute greatly to the heart failure.

The explanation for the terminal pulmonary edema was found in a recent cardiac infarct (36-48 hours old) in the posterior aspect of the apex of the left ventricle. This, added to the rheumatic lesions, brought about a sudden left heart failure, a marked increase in pulmonary congestion and the pulmonary edema which actually produced death by causing asphyxia. The rather sudden onset of edema of the extremities may be explained upon the basis of passive congestion plus *hypoproteinemia*. Additional effects of nutritional edema included ascites (300 ccs.), hydrothorax (2100 cc.) and hydropericardium (250 cc.).

FIGURE 1
Longitudinal section of the heart illustrating the marked thickening and contracting of chordae tendinae attached to the mitral valve. Note also the thickening of the mitral valve. Both ventricles are hypertrophied, especially the right.

DISCUSSION

QUESTION: Were the hepatic function tests done before or after hypoproteinemia was found?

DR. HOPPS: Shortly after admission, plasma proteins were determined as normal. Hepatic function tests were done shortly after this time and did reveal "slight" hepatic insufficiency. Thirty days later the plasma proteins were found to be markedly decreased. Ten days later they were decreased still further.

NATIONAL CONFERENCE ON MEDICAL SERVICE

The 20th Annual Meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, Illinois, on February 9. Registration will commence at 9:00 A.M. and the program will include discussions in the fields of national affairs, economics and medical education. All physicians are invited to attend, there is no registration fee. Dr. Cleon A. Nafe, Indianapolis, is President of the Conference and Dr. Creighton Barker, New Haven, is the Secretary.

Special Article

A DREAM: OF THE UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE AND HOSPITALS*

J. P. GRAY, M.D.

The acceptance of the invitation to present impressions on this topic was evidence of boldness, perhaps even temerity it is now realized, but the opportunity to dream was intriguing and too attractive to let pass unattended. In the words of the President and of the Chairman of the Program Committee, the invitation was set forth in the terms "We know what you have at the University of Oklahoma School of Medicine and Hospitals but we don't know what you have hopes of doing with what you have. Won't you just dream aloud a bit for us and tell us what your hopes and ambitions are? In other words, if you had all the resources that you could ask for, and a free hand to develop as you would like, what would you do with the School of Medicine and Hospitals?"

The term "resources" implies something more than money, and this, indeed, is important in dreaming. To have adequate funds would mean much but to have only funds would not make possible the development of a school of medicine or a medical center. Needed also are certain factors which money cannot provide, such as a purpose, ideas and ideals, hope, faith, charity, selflessness, morale, esprit de corps, teamwork, a deep interest in constant effort at improvement, and the ever continuing search for the truth. So, to dream under these circumstances, with all the resources, including money and the facilities that money can purchase, plus the other resoruces, a few of which have been mentioned, is an assignment that is attractive and intriguing, and much easier than the task might have been had the resouces available been limited to money.

For the school itself: the hope that the school might continue to be young in spirit — growing and developing with the support of an awakened, enlightened, alert, and interested populace and particularly of the two segments of the populace so important to the State supported medical center, the members of the practicing medical profession and of the ancillary professions, and the legislators — remaining relatively small in size, with a premium on quality rather than on quantity — attracting financial support permitting provision of adequate physical facilities for teaching, for research, for service — that the school may take its place among the finer, smaller American schools of medicine, serving Oklahoma and the Southwest, particularly, as a dependable source of supply of outstanding physicians who hold fast to the highest standards of American medicine as they find opportunity to serve communities of the area.

For the faculty: the hopes that there might be an enhanced interest on the part of faculty members in the student of medicine, whether he be undergraduate or graduate, as a younger oncoming colleague needing and wanting counsel and encouragement — that the faculty might be made up of staff members, including heads of departments, who were selected on the basis of training, experience, teaching interests and abilities, research, and interest in students as well as in patients, interest in medical sciences as well as in clinical fields — that the members of the faculty might be provided with opportunities and encouragement in teaching and in research through more nearly adequate salaries, appropriate facilities, lighter loads in other activities (through additional staff members) in order that there may be more intensive teaching and research activities.

The faculty would include full-time men both in the basic medical sciences and in the clinical fields. Similarly, the part-time and

*From a talk made before the Oklahoma County Medical Society, October 22, 1946.

voluntary staff members would continue to serve as members of the faculty actively participating in teaching, more particularly in the clinical fields probably, but, for this group as well, because of the importance of the sciences, opportunities and encouragement would be developed whereby greater interest might obtain in the laboratory and in the library, as places where clinical problems could be studied, perhaps solved. Just as the full-time staff member is frequently highly trained in the basic medical sciences and brings these fields of knowledge closer to the clinical problem, so should there be opportunity of closer relation of the clinical fields to the sciences that the younger colleague in medicine may understand earlier in his career the relationship between the science and the art of medicine.

The part-time teacher and the voluntary teacher, too, have their places in medical education, for the art of medicine is still of great importance (may it ever be so!) and must not be lost so long as the objective of medical education is the training of personnel to provide medical care. The art of the practice of medicine should be taught best by those who practice the art itself. The undergraduate student of medicine must have the viewpoint and the benefit of the hard earned experience of the mature, successful, competent physician in practice.

While to some it might appear that there is inconsistency and even conflict of principles in the combined full-time and the part-time and voluntary teaching staffs set-up, in the ultimate concept these supplement each other. In the environment in which harmony, mutual respect, confidence, interdependence, teamwork, reliance, and selflessness obtain, the composite team can do the complete job with the result that the student of medicine, be he undergraduate or graduate, gains a more wholesome and respectful concept of medicine as a profession. The full-time faculty member, unhampered by the demands and rigors of private practice, devoting his full-time to teaching, actually has the same objective, as a teacher, as the part-time and voluntary teacher has, namely, making a contribution to the knowledge and understanding of medicine in the oncoming younger fellow-student of medicine. Most of the difficulties which arise in controversy over the combined full-time and part-time and voluntary teaching staff arise from the deviation from full-time status to that of competition in practice and, perhaps exploitation of teaching status. It is believed that the competitive status is not good and that perhaps the exploitation of teaching status has been carried out by both groups. In any event, if full-time men are forced into cloistered status, both the student and medicine as a whole, lose. There might be solution of the problem by limitation to consultative opportunity under specific circumstances. Medical education needs the coordinated effort of both groups and there is an important role to be played by each.

In most schools of medicine, selection of teachers is made on the basis of training, experience, research (frequently measured by the number of publications with secondary interest in the qualitative factor), membership in professional organizations, and other evidence of professional standing. These are important, obviously, but it is believed that certain other qualifications are of great importance also. These might include: interest and ability in teaching, open-mindedness, honesty, courage, and, for want of a better term, "personal attractiveness" including: appearance, grooming, culture, behavior, emotional stability, warmth (interest in other persons, particularly in colleagues or co-workers, and in students), attitude, address, et cetera. The teacher of medicine plays a very important role in the establishment of the pattern of the physician of tomorrow, as he teaches the undergraduate student of today. The high standards of current medical education must be guarded zealously and constantly improved if American medical education is to continue to maintain the world leadership now enjoyed.

For the student: the hopes that, once selected for the privilege of the study of medicine, he may have continuing assurance, encouragement, and helpfulness from interested teachers of medicine, to the end that, provided he applies himself diligently, consistently, and persistently, he may make of himself a physician and that the years he spends as an undergraduate student of medicine are the happiest, most satisfying, years of his life. The opportunity of achieving these objectives, obviously, does not exist until two basically important factors operate: the faculty whose members want these objectives to be achieved, and the carefully selected students who are ready for relationships which will permit them to achieve the objective. The hope for such a faculty has been expressed.

The selection of students is one of the most important functions of a school of medicine. If the objective indicated would be achieved,

the most rigorous selection possible is necessary. Outstanding scholarship, in itself important, is not enough, being inadequate as a measure of other desirable attributes and capable of being possessed, it must be admitted, by some who are inadequate in other respects for medicine. Evaluation, even appraisal, is very difficult, but it must be attempted by qualified, interested, competent persons who have understanding of the needs of medicine and who keep constantly in mind the qualities required by medicine of her followers, as well as of medicine by the public. Breeding, culture, attitude, aptitude, character, integrity, personal appearance, emotional stability, address, dress, probity, behavior, poise, equanimity, interests, hobbies, community and social interests, sobriety, sense of humor, sense of values, faith in man, faith in The Supreme Being, these are some of the points to be considered in selection. The selector, or admissions committee members, owe it to medicine, to the public, as well as to the applicant and to his or her parents, to give consideration — as careful consideration as possible — to these and to other important attributes as qualifications for the study of medicine and the rights and privileges of the doctorate.

Even with the most careful appraisal and the most sincere attempt at adequacy of selection, errors are made, perhaps will continue to be made, both in admitting those who actually are not suitable for the privileges and honors of practice, and in denying admission to those who might have been able to make of themselves good reliable physicians. Continued efforts, ever intensified, are warranted, however, in an effort to reduce the inadequacies of selection. In addition, new techniques, as these are developed, should be utilized and will be in effect if they offer reasonable promise of usefulness.

It should be emphasized, too, that the need in medicine has transcended the premedical educational background, in vogue until recent years, that is predominantly in the sciences, to that in which the desirable premedical education includes a good general education superimposed upon which is a sound understanding of the sciences of biology, chemistry and physics. Usually, such understanding is provided by the minimum requirements in courses in these fields with the result that the student is sufficiently well equipped to approach the medical sciences with adequacy of skill and concept of principles. Furthermore the importance of ability in the use of English, both in speech and in writing, cannot be overemphasized, even at the cost of a reading knowledge of French, German, Spanish, or Russian.

The individual selected for the privilege of the study of medicine should be respected and worked with by those of us interested in his education in medicine, not only as one entering current medicine and looking forward to practice in the next few years, but as our successor in medicine, the physician of 1956, 1966, and 1976. The responsibility is clearly set forth: it is very real: it is highly important.

For the physical plant: since what we have is well known, it is probably as true that what we do not have is well known, but the dream of the future requires that mention be made, at least, of what we should have. The less than 400 beds now available in the University Hospitals, distributed as they are, provide far too few beds for the satisfactory teaching of medicine for the numbers of students admitted to the School in recent years. Hospital and outpatient clinic facilities need to be expanded to a minimum of twice the present capacity, and with this expansion, laboratories, especially research and clinical laboratories, likewise, need to be expanded. Library facilities have been inadequate for years and the present situation is acute. These definitely indicate the requirement of an addition to the School of Medicine Building in which would be provided also space for a developing curriculum in public health and for the curriculum in medical social work. In most schools of medicine in the United States, recreational lounge facilities for students are inadequate, but in the University of Oklahoma School of Medicine such facilities do not exist. Unless provision therefor is made, it is little short of ridiculous to expect students to find wholesome, adequate outlets for physical recreation and social intercourse as a group with common interests.

The incorporation of the Oklahoma Medical Research Foundation, achieved in August 1946, is a definite step forward toward the realization of one of the dreams of the late Dean Tom Lowry. A successful campaign to raise an endownment fund to support research in an institute to be erected in the immediate vicinity of the School, will assure a research program that will mean much to Oklahomans and to Oklahoma and Southwestern medicine. If after these developments are provided for, and if space allotted for the proposed City, City-County, or County Hospital permits, there may be located on

the plat of ground east of the School, the 1000-bed Veterans Administration Hospital, recently approved by the Federal authorities for Oklahoma City. These, of course, are in addition to the development of the immediate future with funds appropriated by the Legislature of 1945 for a wing to be added to the University Hospital, for a new nurses home, and for an enlarged power plant and laundry.

From the viewpoint of the taxpayer, the benefits of the School and Hospitals are expected to include a rather extensive service factor. Present facilities limit the service provided to residents of the State to a rather small segment of those really needing such care. While the primary reason for the existence of the Hospitals lies in the basic need of the hospitalized patient for medical education, the service factor has significance that is of undeniable importance. It would seem reasonable also, as pointed out by interested persons in high State positions, that all of the costs of the maintenance and operation of the University Hospitals, not even to mention capital expenditures for their physical development, should not be charged to costs of medical education, in all fairness, since the service factor has value as a public health and welfare function of government and should be charged thereto. Although it appears not to be possible, without an amendment to the State Constitution, to apportion costs for hospital service rendered by a State institution to the counties from which the patients come, and to the State, jointly, it would seem desirable that such procedures be legalized in an effort to place the responsibility for the costs of the tax-supported hospital care in closer proximity to those receiving such care. Even though the hope that more nearly adequate financial support might not be realized, there would be reason to believe that there would be more extensive and more intensive community interest, on a State-wide basis, in the University of Oklahoma School of Medicine and Hospitals.

With the extension of service, made possible by the development of physical facilities as outlined, the School itself would extend its educational activities and interests particularly into the graduate and postgraduate phases of medical education for the physicians of Oklahoma, with such activities to be developed on the University campus in Oklahoma City inevitably, but also to be extended out over the State. Although few schools of medicine in the United States have had continued interest in the graduate in medicine, beyond the internship and residency, World War II has given impetus to such developments in several, and the University of Oklahoma should be developing its interests and activities in this same direction.

Finally, for the curriculum: the hope that the University of Oklahoma School of Medicine might accept the challenge presented by current problems in medical care and the opportunity of making basic contributions to medical education in fulfilling the responsibility stated in the catalog (1943) as the objective of the School. The catalog states: "Briefly, the desire of the school is to offer theoretical and practical training which will fit its graduates to be competent general practitioners."

The extensive developments and significant progress made possible in medicine by specialization that was inevitable during these past 40 rich and turbulent years, have placed American medicine in the responsible but precarious position of world leadership. Every effort must be made to keep that leadership, and specialization is an inherently important — perhaps the paramount — factor leading to the present day status. But, with specialization and development and progress of medicine, other problems have arisen, particularly in medical care for all segments of the population, and especially for rural population groups. It is obvious, even on superficial appraisal, that the problem is more inclusive than the one field of medicine, and that there are other aspects as economic, sociologic, educational, even recreational and religious. But it is believed that the present day curriculum in medicine has played a role in the development of the current situation and that revision of the curriculum will be necessary if medical education meets the need.

It is undeniable that two-thirds of the graduates in medicine enter special fields in medical practice and that four-fifths of the medical problems in clinical practice could be handled satisfactorily, perhaps even more effectively, by the generalist than by the specialist. Group practice, although demonstrated to be effective in many instances, frequent examples being available in Oklahoma in small communities as well as in large cities, does not offer the complete solution to the problem of rural medical service. Modern medicine, as practiced in the large teaching center and as taught the undergraduate and graduate student of medicine, cannot be practiced satisfyingly or satisfactorily without laboratory, x-ray, and hospital facilities and the physician needs also ancillary per-

sonnel, including the dentist, the technologist, and the nurse, in order to practice the quality of medicine which he knows and wishes to bring to his patient.

The curriculum in medical education today is the outgrowth of those same 40 years' progress. However, except for minor adjustments in time allocation and placement of courses, few significant changes in the curriculum have been made during the period except the addition of new courses and new material as research and clinical experience demonstrated advances. An additional factor, definitely related to progress but also responsible for fragmentation of knowledge and resultant lack of correlation and integration, is that of specialties in education with instruction by specialists highly trained and well qualified in their fields. With these developments, the general aspects of medicine have been neglected to the extent that the student is left to do his own correlation and integration. There are those who believe that to attempt integration and to teach principles rather than details, perhaps even to teach at all (believing that the best teaching in medicine is no teaching!) would be to "spoon-feed". It is submitted, however, that medicine demands the best teaching possible, by the best teachers obtainable, and that the curriculum be the best planned possible, to meet the important needs of the profession.

As Alan Gregg puts it, "We ought, before now, to be teaching students of medicine: to made observations accurately and to record them adequately; to analyze and to interpret those observations and recordings; to apply such information to problems that they may be solved; with compassion (sic). Another way of saying it is that we should be preparing students today, not alone to acquire and to understand that knowledge which we have acquired thusfar, but to participate in the acquisition and understanding of that knowledge which will come tomorrow."

It is asked that these comments not be misunderstood. Specialization is important and has made possible our advancement in medicine to our present status. But there is a place in the scheme of things medical, too long neglected, for the man who is a generalist, who needs to have training for his work as generalist, who needs to be the most resourceful man of all those in medicine. Such training would be the better basis upon which specialty training would be superimposed. The University of Oklahoma School of Medicine has an opportunity and it is hoped that sincere, earnest, concerted effort might be made by the faculty to solve this problem.

As every dream has some basis in experience or ambition, or hopes, or desires, so has this dream of the University of Oklahoma School of Medicine and Hospitals. Some parts of the dream stand out in clear definition as within reach — other parts are less well defined, perhaps even hazy in outline, probably not within easy reach. The role of the dean in fulfilling these hopes and ambitions — in making the dream a reality — is perhaps, mainly as catalyst, as well as defender of budgets, friend of students, and guardian of standards in medical education.

The University of Oklahoma School of Medicine and Hospitals is your institution and it merits your interest and support. It is your and my job to do all that we can to make the School and Hospitals what they should be and can be. Together it is within reach. Organized medicine, it is hoped and expected, will continue, in Oklahoma, to participate in medical education, to support medical education, to take a militant stand for enhanced standards of medical care and of medical education. Your helpfulness has meant much to the School and the Hospitals in the past and it is very much appreciated. And may we look forward to its continuance down through the years to come?

GOING TO THE A. M. A. MEETING NEXT SUMMER?

The American Medical Association is going to celebrate its centennial in Atlantic City, June 9-13, 1947. Elaborate plans are being made for this celebration.

Only Fellows and Invited Guests are eligible to attend. Membership in your state society is the primary qualification for Fellowship in the A. M. A. Fellowship dues and subscription to The Journal A. M. A. are both included in one annual payment of $8.00, which is the cost of The Journal to subscribers who are not Fellows.

If you are not a Fellow and plan at attend the Atlantic City session, which will be a milestone in medical history, you can save yourself considerable time and confusion when registering, if you will write now to the American Medical Association, 535 North Dearborn Street, Chicago 10, and ask if you are eligible to become a Fellow.

President's Page

The Year Nineteen Hundred and Forty Seven will bring about a change in the political leadership of our State and Nation. Viewed from a strictly political standpoint, this reflects, in one instance, a change in individual leadership, in the other a political party. In either case the seriousness of the problems of America's continued existence as a democracy are the same as prior to the changes in leadership, and calls for calm, cool, deliberate consideration.

Not all of the calm, cool and deliberate consideration must be in the halls of our State and National Capitols but must also be on the part of the American people. At the same time, complacency must not enter into our attitude toward our government. Never forget that the elected representatives of the people are dependent upon the citizens to assist them in the exercise of their voting privileges.

American medicine has never had a more golden opportunity to exercise leadership than during this period of transition. Leaders in medicine must look forward, not backward. They must realize that the public has a stake and interest in medicine's problems. Above all, the individual physician must realize that, largely through his scientific knowledge and his art in the practice of medicine, together with his acceptance of his civic responsibilities, the public will judge medicine's challenge to the future.

Let none of us be caught short.

L. C. Kuykendall

President.

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ASSOCIATION ACTIVITIES

POSTGRADUATE COURSE
GYNECOLOGY, FEBRUARY 3

On February 3, 1947, the postgraduate course in Gynecology will be initiated in the northeastern part of the state. Announcement letters pertaining to this course have been mailed to each doctor in this district. The Postgraduate Committee is more than enthusiastic over obtaining Dr. J. R. Bromwell Branch as our instructor for the coming two years.

J. R. Bromwell Branch, M.D., F.A.C.S.

Dr. Branch is a gentleman of unusual basic training, almost continuous postgraduate study, years of clinical experience and has proven to be an excellent teacher.

Every doctor should appreciate the fact that this course, like previous courses, could not be offered without the liberal financial assistance of The Commonwealth Fund of New York and the Oklahoma State Health Department. A lesser part of the financial support is furnished by our own Association.

Following is listed the qualifications of the instructor and a brief outline of the course as it will be taught:

Date of Birth: February 28, 1883. Pre-Medical Training: A. B., 1904, Johns Hopkins University. Medical School: M.D., 1908, Johns Hopkins Medical School. 1908-09: Resident House Officer; Gynecological Service, Johns Hopkins Hospital. 1909-10: Resident Surgeon, including Gynecology, Macon Hospital, Macon, Georgia. 1910-15: Attending Gynecologist, while in private practice, Macon Hospital, Macon, Georgia. (One month each year spent in the gynecological clinic of Drs. Kelly, Cullen and Hunner.) 1915-27: Practiced and taught Gynecology as well as Surgery. Hunan — Yale Medical School, Changsha, China. 1921: During the summer attended and assisted in teaching a six weeks postgraduate course in Gynecology with Professor J. Preston Maxwell at the Peking Union Medical College in Peking. 1923 24: Year of furlogh — study in Gynecological Clinics at Hopkins, Mayo Clinic, and others in Chicago and Buffalo, N. Y. Summer of 1924 toured Europe for study in Gynecological Clinics of Edinburgh, Belfast, Dublin, London and Paris, under Rockefeller Foundation Fellowship. 1928-40: Same arrangement as foregoing in Department of Surgery, National College of Medicine, Shanghai, China. 1933: Two months in the gynecological clinics at Johns Hopkins with Navak and others. Also at the Tumor Clinic, University of Maryland, Baltimore. 1941-42: Attending Gynecologist, Macon Hospital, Macon, Ga., with private practice limited to Gynecology. 1943-44: Instructor in Surgical Diagnosis for the state of Tennessee; December, 1944: refreshed month in New York and Baltimore Gynecological Clinics. 1945-46: Instructor in Gynecology for the state of Tennessee.

Lecture No. 1. The Importance of a Complete History, and Study of the Patient As a Whole; No. 2. Pediatric Gynecology; No. 3. Menstrual Abnormalities: General Factors Influencing the Menstrual Function; No. 4. Gynecological Endocrinology; No. 5. Congenital Deformities or Anomalies; No. 6. Infections; No. 7. Leukorrhea: Pelvic Inflammatory Disease; No. 8. Tumors; No. 9. Disturbances in Sexual Life: Frigidity, etc.; No. 10. Roentgenography.

MEDICAL RESEARCH — IMPORTANT ANNOUNCEMENT

The project of the Oklahoma Medical Research Foundation came definitely nearer realization on August 28, 1946, when articles of incorporation were filed with the Secretary of State and when a charter for a corporation to operate on a non-profit basis was issued in the name of that group. Immediately following, those who had been instrumental in advancing the project met and organized with the following officers and board of trustees:

Laymen: Ancel Earp, President; C. A. Vose, Treasurer; C. R. Anthony, Henry S. Griffing, L. C. Griffith, D. A. Harmon, Fred Jones, Robert S. Kerr, Roy C. Lytle, Moss Patterson, Waldo Stephens, Edgar C. Van Cleef, W. R. Wallace, Oklahoma City; Fred L. Dunn, Charles L. Follansbee, Ralph Talbot, Tulsa; Clyde Muchmore, Ponca City; J. G. Puterbaugh, McAlester; Doan Farr, Clinton; W. Lee Woodward, Alva; J. Frank Buck, Shawnee; H. B. Alspaugh, Duncan; Ward Merrick, Ardmore.

Professional: John H. Lamb, Secretary; Lee Emenhiser, Mark Everett, J. P. Gray, Howard C. Hopps, Everett S. Lain, W. Floyd Keller, Lewis J. Moorman, L. Chester McHenry, Henry H. Turner, Oklahoma City; Ralph McGill, James Stevenson, Fred E. Woodson, Tulsa; Paul Champlin, Enid; Henry C. Weber, Bartlesville; John Carson, Shawnee; George Cross, Norman; William Finch, Hobart; O. C. Newman, Shattuck.

Shortly thereafter an office was opened at 208 Braniff Building and the secretarial and clerical staff installed.

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CARL HOTZ, M.D.

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groups, a series of meetings in the major centers of Oklahoma were organized. As this edition goes to press, such meetings have been held in Guthrie, Chickasha, Shawnee, Duncan, Clinton, Altus, Alva, Miami, Durant, and Bartlesville. Other important centers will be visited prior to January 17. On that date an organized meeting to cyrstallize sentiment and secure leadership will be held in Oklahoma City. At that time more detailed plans will be announced. The special speaker for that event will be Dr. Walter C. Alvarez, of the Mayo Clinic, Rochester, Minnesota.

During the spring months of the year an organized fund raising movement will get under way. It will be preceded by a number of local meetings at which outstanding scientists from all over the United States will be asked to participate and the public's attention focused on the need for and benefits from scientific research in the field of medicine. Attention will be drawn to the fact that in comparison with nearby states such as Texas and California, Oklahoma is not doing its share of such work.

An inspiring phase of the progress to date is the interest and enthusiasm of business and professional men outside the field of medicine in this project, which is generally regarded as a humanitarian movement and only indirectly a project for the benefit of medicine.

In seeking support of the general public, the project is placed at $1,500,000 minimum, and $3,000,000 as the desired amount. An interested friend made the remark, "You can't do much research work for $3,000,000." The only possibly reply was made — "probably that is true, but it would make a start". And a start is the important thing at the present time.

OKLAHOMA STATE MEDICAL ASSOCIATION REPRESENTED AT MID-WINTER MEETING OF A. M. A. HOUSE OF DELEGATES AND ANNUAL SECRETARY-EDITOR'S CONFERENCE

Oklahoma Delegates James Stevenson, M.D., Tulsa, and C. R. Rountree, M.D., Oklahoma City, President-Elect Paul B. Champlin, M.D., Enid, Editor L. J. Moorman, M.D., Oklahoma City, the Executive Secretary and Associate Secretary attended the A. M. A. House of Delegates first mid-winter meeting and the annual Secretary-Editor's Conference held at the A. M. A. headquarters in Chicago, December 7th through 11th.

Overshadowing the many resolutions introduced before the House of Delegates was the presentation, in its entirety, of the Rich Report. Mr. Raymond Rich and Associated were engaged by the A. M. A. some year and one-half ago to make a complete analysis and thorough study of the A. M. A.'s public relations program and activities pertaining thereto. Many of the recommendations offered by the Rich firm have already been adopted and become effective through the actions of the A. M. A. Board of Trustees. An outstanding example of such action is the employment of the new Executive Assistant, Mr. Charles Swart. The Rich Report has not been released for publication as of this date pending further study and action by both the Board of Trustees and the House of Delegates, but it can be said that the study is most far-reaching and constructive and it is anticipated that many new improvements and betterment policies will result from this important research and analysis by experts in the field of public relations. A detailed report was submitted to the Delegates by the proper committee pertaining to the A. M. A. Constitution and By-Laws to make it in keeping with changes coming out of the Rich Report analysis.

The Committee on the Annual Meeting of A. M. A. will extend invitations to eleven foreign countries for representation at the next annual Meeting scheduled for June 9 through 13, 1947. The president of the United States will also receive special invitation to attend and his presence has been tenatively arranged.

Secretary-Editor's Meeting December 7 and 8

Following the customary preliminaries of any conference the entire program for the first day's session of the Secretaries' and Editors' Conference consisted of many excellent and timely papers presented to the entire group. George F. Lull, Secretary-General Manager of A. M. A. spoke on "The Activities of the A. M. A.", W. W. Bauer discussed the "State Medical Societies Participation in Network Broadcasting". The Secretary of the Connecticut State Medical Society, Dr. Creighton Barker, presented a paper on "The State Medical Socity and the State Government"; Dr. James C. Sargent of Milwaukee, Wisconsin, closed the morning session with his paper entitled, "The Responsibility of the Individual Physician".

At the afternoon session Mr. Thomas V. McDavitt of the A. M. A. spoke on "State Medical Associations and Social Security and Federal Income Taxes". One of the highlights of Mr. McDavitt's paper brought out the very important suggestion that every medical society, both county and state, should determine its status as regards social security and federal income taxes. He stressed the importance of determining the tax status rather than ignoring it.

Mr. M. L. Meadors, Director of Public Relations of the South Carolina Medical Association, spoke on the subject, "The County Medical Society" and the Editor of the Connecticut State Medical Journal, Stanley B. Weld, gave a paper on "The Cooperative Medical Advertising Bureau". This session was brought to a close with Mr. Swart presenting a paper entitled "The Medical Profession and Public Relations".

The evening session of the Conference was divided into two groups; secretaries and editors. The group of secretaries had Douglas L. Cannon, Alabama State Medical Association Secretary, presiding with L. Fernald Foster, Secretary of Michigan State Society presenting a paper on "Commercial Exhibits". Dick Graham, Oklahoma State Medical Association Executive Secretary, spoke on the subject of "The Home Office of a State Medical Association". The editor group was presided over by Robert N. Nye, Managing Editor of the New England Journal of Medicine. Mr. Theodore Wiprud, Managing Editor of the Medical Annals of the District of Columbia presented a paper and discussion on the subject of a recent survey entitled "The Medical Editor Consults His Readers". Jonathan Forman, editor of the Ohio State Medical Journal, spoke on the subject "Our Concept of the Function of a State Medical Journal".

The last meeting of the Conference concerned the reports from the two sessions by their presiding officers and a finale of open forum at which all speakers and members of the conference were invited to participate.

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HAVE YOU HEARD

Dr. J. Raymond Hinshaw has received a Rhodes Scholarship, one of the 48 presented in the United States. Raymond, son of *Dr. J. R. Hinshaw* of McAlester, graduated from O. U. Medical School in 1946, where he won the Oklahoma Hall of Fame Scholarship Award and several other honors. At the present time he is interning at Strong Memorial Hospital in Rochester, New York. The Rhodes Scholarship provides for study at Oxford University.

Dr. A. E. Hennings of Tuttle was the first candidate to file for representative from District 2, Grady County, for a special election.

Dr. Catherine Brydia of Ada has been appointed to the Board of Health for a nine year term.

Formerly of Weatherford, *Dr. Noah E. Ruhl* is now residing in Oklahoma City, where he is engaged in a limited practice.

The Legion of Merit was awarded to *Dr. E. Rankin Denny* of Tulsa recently. Dr. Denny was retired from the Army with the rank of Colonel in 1946.

A Women's Auxiliary to the *Carter County Medical Society* has been organized, including wives of physicians in Carter and Love counties. *Mrs. Joseph Kelso* and *Mrs. Ray Balyeat*, officers in the auxiliary to the Oklahoma State Medical Association, assisted in the organization.

Dr. O. S. Somerville of Bartlesville retired January 1 as Medical Director for the Phillips Petroleum Company and from general practice. He had been practicing medicine in Bartlesville since 1905 and had been connected with the Phillips Petroleum Company as Medical Director since its organization in 1917. He was succeeded by *Dr. Kieffer D. Davis* as Medical Director for the company.

Dr. A. W. Stickle, Jr., has announced the opening of his office for general practice in Stillwater.

Dr. C. L. Johnson has become associated with *Dr. H. C. Weber* in Bartlesville. Before serving in the Navy Dr. Johnson was graduated from the University of Oklahoma School of Medicine.

At the Annual Banquet of the Oklahoma Memorial Association in Oklahoma City, *Dr. D. P. Richardson* of Union City was honored when his portrait was presented to the Association in a public ceremony. Dr. Richardson had previously been named to Oklahoma's Hall of Fame. The portrait is to be hung in the Historical Building.

Dr. Gordon D. Williams has moved into newly remodeled offices in Weatherford.

Dr. William Waldrop of Oklahoma City won high praise for an entry in a Red Cross contest in a Tokyo Army Hospital conducted last spring. Dr., then Captain, Waldrop's invention was a "walker" for men in leg casts which enabled patients to get out of bed sooner.

MEDICAL SCHOOL

CALENDAR — JANUARY, 1947

SURGICAL PATHOLOGIC CONFERENCES — Each Tuesday 12:00 Noon to 1:00 P. M.

MEDICAL CONFERENCES — Each Wednesday, 9:00 to 10:00 A. M.

CLINICAL PATHOLOGICAL CONFERENCE — Each Thursday 12:00 Noon to 1:00 P. M.

TUMOR CLINIC — First and Third Tuesday (January 7 and 21) 8:00 A. M. to 9:00 A. M.

UROLOGIC-PATHOLOGIC CONFERENCE — Second Tuesday (January 14) 8:00 A. M. to 9:00 A. M.

MONTHLY STAFF MEETING — Second Friday (January 10) Dinner, 6:15 P. M.

RADIOLOGIC CONFERENCE — Fourth Monday (January 27) 6:45 P. M. to 7:30 P. M.

Dr. Richard B. Ford (Med '28), died following a heart attack at his home in Corpus Christi, Texas. Dr. Ford, 48, practiced in Holdenville and Tulsa, Oklahoma, for several years before moving to Corpus Christi.

Dr. Paul Williamson (Med '46), who is interning at Denver, Colorado, was a recent visitor at the Medical School. Dr. and Mrs. Williamson are the parents of a new daughter, Paula Lee, born November 29th in Oklahoma City.

Dr. Kemp H. Dowdy (Med '40) has recently been released from military duty and has returned to Everett, Washington.

Dr. Malcolm Mollison (Med '46), a recent visitor, indicated that he is enjoying his internship at the St. Joseph's Hospital in St. Paul, Minnesota.

Dr. Edward W. A. Ochsner, Professor of Surgery, Tulane University, School of Medicine, spoke to the medical students November 26th, on "Peptic Ulcer".

Lieutenant Colonel Weldon K. Ruth (Med '33) has recently been retired from military service. According to the Journal of the American Medical Association of December 7, 1946, "The Bronze Star was recently awarded Lieut. Col. Weldon K. Ruth, M.C., U. S. Army, of Okeene, Oklahoma, who 'performed meritorious and heroic services from April 10 to 22, 1942, during the march of captured Americans from Bataan Province to Japanese concentration camp near Capas, Tarlac, Philippine Islands.' Lieutenant Colonel Ruth was cited for disregarding his own condition and risking brutalities and death at the hands of the Japanese by continually attending his sick, exhausted comrades. He prevented the murder of two officers on separate occasions by interposing his body between them and enemy soldiers until he could revive them enough to continue the march. Lieut. Col. Ruth's ministrations did much to alleviate the suffering of his fellow prisoners of war." Dr. Ruth graduated from the University of Oklahoma School of Medicine, Oklahoma City, and entered the service December 7, 1936.

Dr. Ardell Nichols Taylor was appointed Assistant Professor of Physiology October 1, 1946. Dr. Taylor received his Ph.D. at the University of Texas in 1943.

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HITS, RUNS, ERRORS

NOVEMBER 21: An afternoon session with the Annual Meeting Committee on some problems for 1947. A chiropractor friend (?) calls to report another chiropractor who is writing prescriptions. Wants Medical Board to do something about it, and as my Dad used to say, "to think they shot Abe Lincoln".

NOVEMBER 22: Lunch with Dr. Burton and Warren Humphries and again the subject is the ad copy. The Committee will meet Sunday December 1. Over to the State Hospital meeting for a once over and from there to the state meeting of the Health and Accident Agents, finally to the office to work.

NOVEMBER 23: Plans made to go to Norman for another go round concerning hospital care for veterans.

NOVEMBER 24: Two meetings today, one of Crippled Children's Committee, and the other Scientific Work Committee. Fine attendance at both and lots o fwork accomplished. More about this later.

NOVEMBER 25: Scheduled for an Editorial Board Meeting in Shawnee with Dr. Eugene Rice but the snow and sleet canceled the trip.

NOVEMBER 26: To Tulsa with Fondren and to meet the president, Dr. Kuyrkendall, then to a meeting of the Board of Trustees of the County Society concerning the Annual Meeting. Most of the problems have been worked out.

NOVEMBER 27: Correspondence on Annual Meeting to get confirmation of promised reservations at hotels in writing. Announcement and invitation letters sent to prospective exhibitors on Annual Meeting.

NOVEMBER 28: Thanksgiving. Office closed.

NOVEMBER 29: Working on sample questionnaire for Journal improvement campaign. Send us a note with your ideas for a better Journal.

NOVEMBER 30: Committee on Public Policy meeting tomorrow to review next three series of newspaper ads. Gathering material to present to Committee.

DECEMBER 2: To Duncan with Drs. Rountree and Gray and Mr. Frankenburg to help along the cause of the Oklahoma Research Foundation. Fine meeting and we were the guests of Dr. Alspaugh.

DECEMBER 3: To Rotary and then to a statewide mass meeting to formulate a Mental Hygiene Association. Discussion with local Pharmaceutical Association concerning the providing of drugs for veterans. It's a mess.

DECEMBER 4: Consternation and confusion reign in the office because tomorrow we leave for mid-winter meeting of A. M. A. and all our omissions and errors have to be corrected in one day.

DECEMBER 5: Long distance call received from Dr. Bailey in Stroud and we got some matters straightened out. Leave on the Frisco at 12:45 P. M. for Chicago.

DECEMBER 6 to 12: The cats (Graham and Fondren) are away to Chicago. The mice (Taylor, Tucker and Ramsey) no doubt are playing. An outstanding A. M. A. House of Delegates meeting and Secretaries-Editors Conference. The Rich Report modernizes the A. M. A. and everyone is pleased. Delegate Rountree ends up on the Public Health Reference Committee. Oklahoma is represented by Drs. Champlin, Moorman, Stevenson, Rountree and Drs. Ewing and Osborn were present to help the A. M. A. and attend to their own Medical Board business.

DECEMBER 13: Caught up with the mail and had a long session with Dr. Burton on the ads and special assessment.

DECEMBER 14: Interviewed applicants for one of the secretarial positions. It's hard to find journalistic experience combined with shorthand. Telephone session with Dr. Floyd Keller on Medical Examiner Bill. Dr. Moorman was excellent on the N.B.C. radio program, "Doctors — Then and Now".

DECEMBER 16: Talked to Dr. Matt Connell in Picher concerning a physician being trailed by the Medical Board of Examiners. The President, Dr. Kuyrkendall, authorized a meeting of the Executive Committee of the Council and work on the 1947 program will soon begin.

DECEMBER 17: Was scheduled to go to Idabel but meeting postponed until January 14th. More trouble on veteran medical care plan and letter goes to Committee for advice.

DECEMBER 18: Ballot on change in Annual Meeting goes to Delegates, the outcome is anxiously awaited. Conference with Bill Harkey, Attorney for Medical Board, and Walter Gray, attorney for Osteopathic Association. Latter extremely interesting. More about this later.

DECEMBER 19: Dr. Moorman review results of survey on the Journal. The comments were helpful and Editorial Board will act upon them. Need more help of this sort.

DECEMBER 20: Dr. Tisdal is in and a meeting is planned to discuss work of his A. M. A. Committee on conservation of medical personnel should there be another national emergency. W. G. Skelley of Tulsa was elected head of Oklahoma Division American Cancer Society.

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MEDICAL ABSTRACTS

DIAGNOSIS AND MANAGEMENT OF UTERINE CARCINOMA AND SARCOMA. L. C. Scheffey. M.D. Surgical Clinics of North America. Vol. 25. p. 1262. 1945.

A review of pelvic malignancies is presented. The author notes that carcinoma of the cervix is no respector of the so-called cancer age, and that 27 per cent of cancer patients seen at the Jefferson Clinic, Philadelphia, were under 40 years of age. He advocates the use of biopsy on all suspicious lesions, and the necessity, in many cases, of splitting the cervix for a more careful inspection. The vaginal smear technique is used in his clinic, but it is admitted that a long period of training is necessary before one can be proficient in identifying abnormal cells which are characteristic of malignancy.

The author reviews the management of carcinoma of the cervix, and compares the results obtained from use of the radical Wertheim operation with those obtained from irradiation. He quotes statistics from many clinics which have used one or both methods, and concludes that irradiation is the treatment of choice in the great majority of cases. In the Jefferson Clinic the survival rate, based on a five year follow-up, was 47 per cent for early cases and 23.5 per cent as an over-all rate. The technique employed at the Clinic is discussed in detail and the use of deep roentgen rays through four external ports, combined with the transvaginal port is favored. A massive dose treatment with radium follows the deep x-ray treatments.

The occurrence of carcinoma in the cervical stump following supravaginal hysterectomy is estimated at approximately 1 per cent, and the treatment of choice is irradiation. Carcinoma of the cervix in association with intrauterine pregnancy is noted as a combination of rare occurrence, with an estimated incidence of one case in 10,000 pregnancies. The use of biopsy is recommended, and precedence is given to management of the carcinoma over the possibility of obtaining a live baby.

The incidence of carcinoma of the fundus in patients under 40 is rare, and figures from the Jefferson Clinic place their average age at 59. The use of natural and synthetic estrogens in the management of symptoms of the menopause has frequently confused the diagnostic picture in postmenopausal bleeding, and stress is placed on the fast that diagnostic curettage is necessary when bleeding occurs. The author's management of fundal carcinoma is preliminary radiation followed by total hysterectomy and extirpation of the adnexa in every patient who can tolerate surgical procedures.

It is estimated that sarcoma of the uterus occurs in approximately three per cent of all uterine malignancies. The treatment and prognosis is generally accepted to be unsatisfactory.—G.P.

THE TREATMENT OF CONVERGENCE DEFICIENCY. Sheila Mayou. British Journal of Ophthalmology. Volume 30. pp. 354-370. June. 1946.

Some patients with eyestrain can be relieved of their symptoms by the correction of their refractive errors with a permanent recovery; in others, who have a true convergence deficiency, the recovery will be only temporary. Eyestrain is due to various conditions such as defective muscle balance, defective binocular vision, uncorrected errors of refraction, or to convergence deficiency.

Convergence deficiency is a very frequent cause of eyestrain, and, as the author shows, more than 70 per cent of such cases can be successfully treated by orthoptic exercises. It is thought that the symptoms caused by close work, which are not due to a muscle imbalance or any refractive error, are caused by suppression. The patients can be treated, therefore, by antisuppression exercises with success, and when the area of suppression has been overcome the binocular abductions and adductions are increased to their normal range.

The patient can be taught to converge voluntarily. To do this the patient is made to look at any object in front of him, and is taught to converge both eyes equally without effort. This usually causes homonymous diplopia which the patient should be able to maintain for a few seconds before letting the two images merge into one. Once the patient knows what is wanted and is able to do it easily, his symptoms will disappear. It is the author's experience that the average person, provided he has normal muscular balance and is prepared to cooperate and concentrate on his treatment, can be taught voluntary convergence in seven half-hour periods and can be freed, probably for ever, from the distressing symptoms which convergence deficiency can cause.

The most usual symtoms of which patients complain are headaches, either during or after working hours, or nausea, giddiness and occasional diplopia; other common symptoms are sore eyes and dry lids, a feeling of grit on the eyes, or a drawing feeling or acute pain in one or both eyes. Some patients find themselves unable to read in comfort or to sew for any length of time. Others may be unable to go to a cinema or ride in a car, bus or train without discomfort.

Some convergence deficiencies are of traumatic origin. Any severe blow to the head may be sufficient to cause the symptoms. A few patients may have also migraine; they also can gain alleviation of their sickness from treatment of convergence deficiency.

Even those patients who have orthophoria and can actually converge may benefit from treatment, while many patients with small refractive errors are able to dispense with their correction after they have been treated.

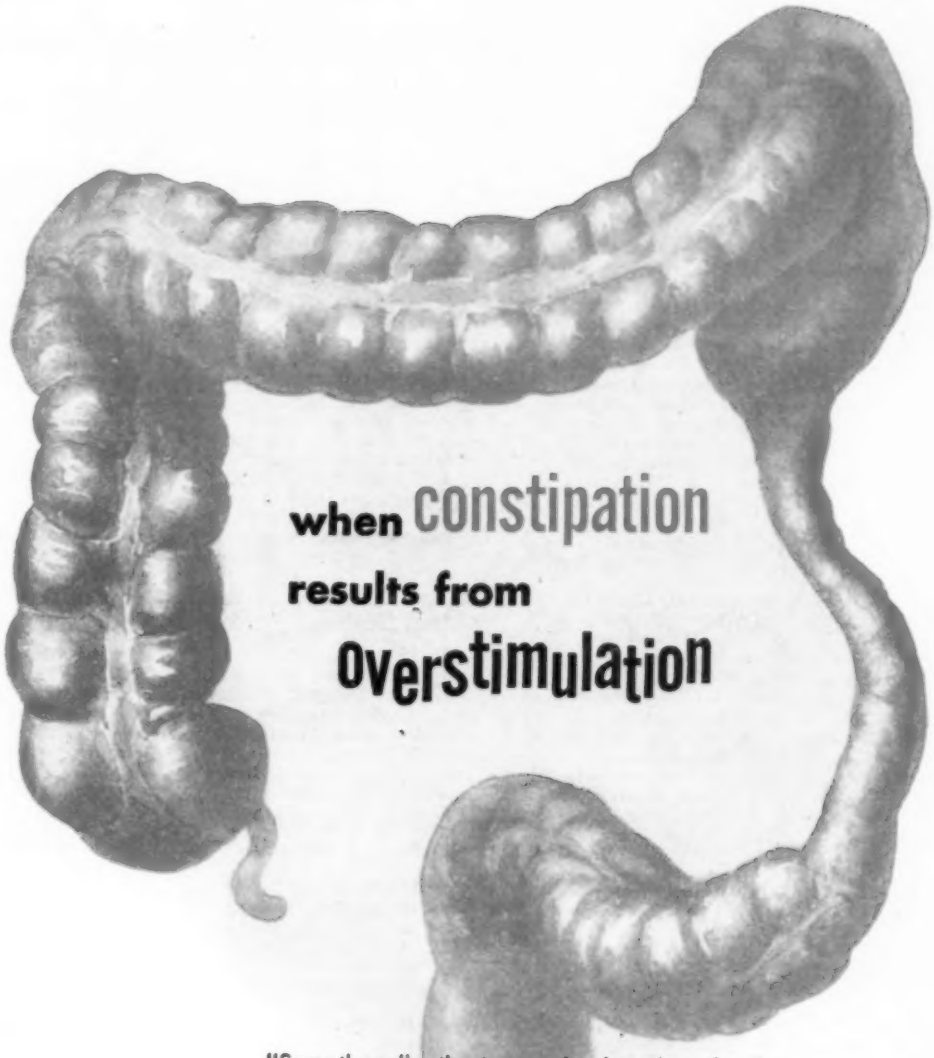
The treatment can be quick and effective but must be taken under trained supervision. The psychological element is often present in these convergence deficiencies, and particular attention must be paid to the patient's mental approach both before and during treatment since successful remedy lies largely in his own hands.—M.D.H.

MASTECTOMY FOR GYNECOMASTIA THROUGH A SEMICIRCULAR INTRA-AREOLAR INCISION. Jerome P. Webster. M.D. Annals of Surgery. Vol. 124; No. 3; pp. 557-575. September, 1946.

This is an excellent article written upon a condition that is quite often seen in general practice.

"The indications for corrective therapy for gynecomastia are discussed with emphasis on the importance of overcoming the psychic trauma caused by the female appearance of the male breast. Of the various therapeutic measures that have been advocated, operation offers the most satisfactory result. Extra-areolar incisions for removal of breast tissue leave scar deformities that indicate operative interference; therefore, such procedures fail to attain the best psychologic results."

The author reviews previous methods of mastectomy and then presents his method. This is well explained by both photographs and explicit drawings.—J.F.B.



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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

OFFICERS OF COUNTY SOCIETIES, 1947

COUNTY	PRESIDENT	SECRETARY	MEETING TIME
Alfalfa	W. G. Dunnington, Cherokee	L. T. Lancaster, Cherokee	Last Tues. each Second Month
Atoka-Coal	J. B. Clark, Coalgate	J. S. Fulton, Atoka	
Beckham	P. J. DeVanney, Sayre	J. E. Levick, Elk City	Second Tuesday
Blaine	W. F. Bohlman, Watonga	Virginia Curtin, Watonga	Third Thursday
Bryan	W. K. Haynie, Durant	Jonah Nichols, Durant	Second Tuesday
Caddo	P. H. Anderson, Anadarko	Edward T. Cook, Jr., Anadarko	Third Thursday
Canadian	G. L. Goodman, Yukon	W. P. Lawton, El Reno	Subject to call
Carter	J. Hobson Veazey, Ardmore	J. Hobson Veasey, Ardmore	Second Tuesday
Cherokee	P. H. Medearis, Tahlequah	R. K. McIntosh, Jr., Tahlequah	First Tuesday
Choctaw	Floyd L. Waters, Hugo	O. R. Gregg, Hugo	
Cleveland	James O. Hood. Norman	Phil Haddock, Norman	Thursday nights
Comanche	Wm. Cole, Lawton	E. P. Hathaway, Lawton	
Cotton	G. W. Baker, Walters	Mollie Scism, Walters	Third Friday
Craig	Lloyd H. McPike, Vinita	J. M. McMillan, Vinita	
Creek	O. H. Cowart, Bristow	F. H. Sisler, Jr., Sapulpa	Second Tuesday
Custer	Ross Deputy, Clinton	C. J. Alexander, Clinton	Third Thursday
Garfield	Bruce Hinson, Enid	John R. Walker, Enid	Fourth Thursday
Garvin	M. E. Robberson, Jr., Wynnewood	John R. Callaway, Pauls Valley	Wednesday before Third Thursday
Grady	Roy Emanuel, Chickasha	Rebecca H. Mason, Chickasha	Third Thursday
Grant	I. V. Hardy, Medford	F. P. Robinson, Pond Creek	
Greer	J. B. Lansden, Granite	J. B. Hollis, Mangum	
Harmon	W. G. Husband, Hollis	R. H. Lynch, Hollis	First Wednesday
Haskell	Wm. S. Carson, Keota	N. K. Williams, McCurtain	
Hughes	Victor W. Pryor, Holdenville	L. A. S. Johnston, Holdenville	First Friday
Jackson	E. W. Mabry, Altus	J. P. Irby, Altus	Last Monday
Jefferson	F. M. Edwards, Ringling	J. A. Dillard, Waurika	Second Monday
Kay	L. G. Neal, Ponca City	J. C. Wagner, Ponca City	Second Thursday
Kingfisher	John W. Pendleton, Kingfisher	H. Violet Sturgeon, Hennessey	
Kiowa	Wm. Bernell, Hobart	J. Wm. Finch, Hobart	
LeFlore	S. D. Bevill, Poteau	Rush L. Wright, Poteau	
Lincoln	J. S. Rollins, Prague	Ned Burleson, Prague	First Wednesday
Logan	James Petty, Guthrie	J. E. Souter, Guthrie	Last Tuesday
Mayes	L. C. White, Adair	V. D. Herrington, Pryor	
McClain	S. C. Davis, Blanchard	W. C. McCurdy, Purcell	
McCurtain	J. T. Moreland, Idabel	R. H. Sherrill, Broken Bow	Fourth Tuesday
McIntosh	F. R. First, Checotah	W. A. Tolleson, Eufaula	First Thursday
Muskogee-Sequoyah			
Wagoner	W. P. Fite, Muskogee	William N. Weaver, Muskogee	First Tuesday
Noble	A. M. Evans, Perry	Jesse W. Driver, Perry	
Okfuskee	W. P. Jenkins, Okemah	M. L. Whitney, Okemah	Second Monday
Oklahoma	W. F. Keller, Okla. City	John H. Lamb, Okla. City	Fourth Tuesday
Okmulgee	F. S. Watson Okmulgee	C. E. Smith, Henryetta	Second Monday
Osage	E. C. Keyes, Hominy	Vincent Mazzarella, Hominy	Third Monday
Ottawa	C. F. Walker, Grove	W. Jackson Sayles, Miami	Second Thursday
Pawnee	H. B. Spaulding, Ralston	R. L. Browning, Pawnee	
Payne	F. Keith Oehlschlager, Yale	C. W. Moore, Stillwater	Third Thursday
Pittsburg	Millard L. Henry, McAlester	Edward D. Greenberger, McAlester	Third Friday
Pontotoc-Murray	E. D. Padberg, Ada	Ollie McBride, Ada	First Wednesday
Pottawatomie	Charles F. Paramore, Shawnee	Clinton Gallaher, Shawnee	First and Third Saturday
Pushmataha	John S. Lawson, Clayton	B. M. Huckabay, Antlers	
Rogers	W. A. Howard, Chelsea	P. S. Anderson, Claremore	Third Wednesday
Seminole	Clifton Felts, Seminole	Mack I. Shanholz, Wewoka	Third Wednesday
Stephens	Everett King, Duncan	Fred L. Patterson, Duncan	
Texas	Daniel S. Lee, Guymon	E. L. Buford, Guymon	
Tillman	H. A. Calvert, Frederick	O. G. Bacon, Frederick	Second and Fourth Monday
Tulsa	E. O. Johnson, Tulsa	John E. McDonald, Tulsa	
Washington-Nowata	Ralph W. Rucker, Bartlesville	L. B. Word, Bartlesville	Second Wednesday
Washita	L. G. Livingston, Cordell	Roy W. Anderson, Cordell	
Woods	C. A. Traverse, Alva	O. E. Templin, Alva	Last Tuesday Odd Months
Woodward	Myron England, Woodward	C. W. Tedrowe, Woodward	Second Thursday Even months